

Combined management report

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Introductory remarks



This report combines the management report of the Deutsche Telekom Group, comprising Deutsche Telekom AG and its consolidated subsidiaries, and the management report of Deutsche Telekom AG.

The structure and content of the report follow the internal **management approach** of Deutsche Telekom AG. Since the third quarter of 2022, the GD Towers business entity, which operates the cell tower business in Germany and Austria, assigned to the Group Development operating segment, has been recognized in the consolidated financial statements as a discontinued operation. However, in the combined management report we continue to include the contributions by GD Towers in the results of operations according to the management approach.

For information on the agreement with DigitalBridge and Brookfield on GD Towers, please refer to the section "[Group organization](#)."

The recommendations of the German Corporate Governance Code (GCGC) in the amended version published in the Federal Gazette on June 27, 2022 require information on the **internal control system** and the **risk and opportunity management system** that go beyond the legal requirements for the management report and are therefore excluded from the substantive audit of the management report by the independent auditor (information extraneous to the management report). This information is included in paragraphs clearly separated from the information that has to be audited, and is designated with a footnote.

For further information, please refer to the section "[Governance and other disclosures](#)."

In the reporting on our corporate responsibility activities, we also explain the ways in which we contribute to achieving the UN Sustainability Development Goals (SDGs), which have been set as part of the 2030 Agenda. To clearly highlight the contribution our products, services, and activities make towards the individual sustainability development goals and our value chain, we have marked the relevant passages with the respective **SDG** and **value contribution symbols** (illustrative example:  ). This is also information extraneous to the management report and is excluded from the auditor's substantive audit.

For further information on the SDGs and our value contributions, please refer to the section "[Combined non-financial statement](#)."

In addition, our Annual Report (PDF and online) includes **references** and **links** to websites with additional information not contained in the Annual Report. These references and links are purely of a supplementary nature and are only intended to simplify access to this information. Please note that this information is not part of the Annual Report and is therefore also excluded from the auditor's substantive audit.

Group organization


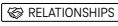
Business activities

With 245 million mobile customers, 25 million fixed-network lines, and 21 million broadband customers, we are one of the leading integrated telecommunications companies worldwide. We provide fixed-network/broadband, mobile, internet, and internet-based TV products and services for consumers, and information and communication technology (ICT) solutions for business and corporate customers. We have an international focus and are represented in more than 50 countries. With 206,759 employees worldwide (as of December 31, 2022), we generated revenue of EUR 114.4 billion in the 2022 financial year. 77.9 % of the Group's net revenue is generated outside of Germany.




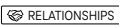

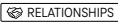
Our ambition is to become the Leading Digital Telco. Only if Deutsche Telekom is digitalized in all areas, can the success of the last few years continue. With our footprint in Europe and the United States, we are ideally positioned for this. Our core business, i.e., the operation and sale of networks and lines, remains the basis.

For further information on our Leading Digital Telco vision, please refer to the section "[Group strategy](#)."

Our mobile communications business offers mobile voice and data services to consumers and business customers; in addition, we sell mobile devices and other hardware. We also sell mobile services to resellers and to companies that buy network services and market them to third parties (mobile virtual network operators, or MVNOs). Our fixed-network business includes all voice and data communications activities based on fixed-network and broadband technology. This includes the sale of terminal equipment and other hardware, as well as the sale of services to resellers. Drawing on a global infrastructure of data centers and networks, we operate ICT systems for multinational corporations and public-sector institutions.

Our responsible corporate governance and business success are based on our shared corporate values and our **Guiding Principles**.  

For further information about our Guiding Principles, please refer to the section “[Employees](#).”

Our **identity** defines our corporate purpose and describes what we at Deutsche Telekom stand for: We want to be a sustainably growing company that not only delights its customers, creates value for its investors, and in which employees enjoy their work, but also one that is environmentally friendly and fosters a democratic and inclusive society. Our network is fast, reliable, secure, and should be easily accessible for everyone. In addition, it has been operated throughout the Group with electricity from 100 % renewable sources since 2021.   But, we are more than just another company that provides society with infrastructure. We want to connect people and make their lives permanently easier and more enriched. With our No Hate Speech campaign, we are actively pushing for greater digital democracy.   This is our mission. We are a close and trusted companion to the customer; transparent, fair, and open to dialog. We identify innovative products at an early stage and develop them in collaboration with our partners. It is our contribution to social togetherness. Our identity reflects all of this. We want everyone to #TAKEPART as is summarized in one short purpose statement: We won't stop until everyone is connected.  

Segment structure

Our financial reporting aligns with our Group strategy and is divided into five operating segments plus the Group Headquarters & Group Services segment, each of which we describe in detail below.

Our **Germany** operating segment comprises all fixed-network and mobile business activities for consumers and business customers, including separate sales entities in Germany to allow a customer-centric sales approach. As a pioneer of digitalization, the segment offers its customers a tailored service and product portfolio that is designed to be innovative while at the same time secure and simple. Furthermore, the security business in Germany, Austria, Switzerland, Hungary, and Slovakia has been merged in this segment since the reporting year. Another focus is on the wholesale business to provide telecommunications services for carriers. The bundling of customer service activities places a further focus on customer satisfaction and quality assurance. Build-out of the mobile and fixed networks is managed by the Technology business unit in this segment.

Our **United States** operating segment combines all mobile activities in the U.S. market. T-Mobile US provides service, devices and accessories across our flagship brands. In addition, we sell devices to dealers and other third-party distributors for resale. The positive business development has been built on the back of the Un-carrier strategy, disrupting the wireless communications services industry. They provide wireless communications services through a variety of service plan options to U.S. domestic customers, including plans marketed to businesses. T-Mobile US also offers a wide selection of wireless devices, including smartphones, wearables, tablets, home broadband routers and other mobile communication devices that are manufactured by various suppliers. In addition to their wireless communications services, they offer High Speed Internet utilizing their nationwide 5G network. They also provide products that are complementary to our wireless communications services, including device protection and wireline communication services. In September 2022, T-Mobile US entered into an agreement for the sale of the Wireline Business.

Our **Europe** operating segment comprises all fixed-network and mobile operations of the national companies in Greece, Hungary, Poland, the Czech Republic, Croatia, Slovakia, Austria, North Macedonia, and Montenegro. In these countries, we are an integrated provider of telecommunications services. In Romania, we are focused on mobile activities since the sale of OTE's 54 % stake in Telekom Romania Communications in the prior year. Besides traditional B2C fixed-network and mobile business, most of our national companies also offer ICT solutions for business customers.

As a leading provider of IT services to businesses in German-speaking countries, our **Systems Solutions** operating segment offers a focused B2B product and solution portfolio under the T-Systems brand. With its horizontal offerings for advisory, cloud services, and digitalization solutions, T-Systems addresses the most attractive growth areas in the information technology market. Data sovereignty and security solutions are at the core of the product options, supplemented with strategic partnerships. Focused vertical offerings penetrate deep into the value chains of selected industries (automotive, healthcare, public sector, and transportation). We have been implementing a comprehensive transformation program since 2018, part of which has been to realign both our organization and our workflows, and make adjustments to our capacities. We now have four portfolio units: Cloud Services (Public Cloud, SAP AO, Managed Infrastructure Services & Private Cloud), Digital Solutions (including SAP SI), Security (in close cooperation with Deutsche Telekom Security), and Advisory (with Detecon as an integrated consulting provider). In addition, our Road User Services business unit offers road toll systems.

Our **Group Development** operating segment actively manages entities, subsidiaries, and equity investments to grow their value while giving them the entrepreneurial freedom they need to promote their continued strategic development. In this context, we sold our subsidiary T-Mobile Netherlands on March 31, 2022. Within the segment, the GD Towers business entity comprises the German and Austrian cell tower businesses. On July 13, 2022, we signed an agreement for the sale of 51.0 % of the shares in this entity. The transaction was consummated on February 1, 2023. The investment management group Deutsche Telekom Capital Partners; Comfort Charge, which is a provider of e-mobility charging infrastructure; and the Group functions of Mergers & Acquisitions and strategic Portfolio Management are also assigned to Group Development.

Group Headquarters & Group Services comprises all Group units that cannot be allocated directly to one of the operating segments, and also reports on our Board of Management department for Technology and Innovation. As the organization that sets the direction and provides impetus, it defines strategic aims for the Group, ensures they are met, and becomes directly involved in selected Group projects. Group Services provides services to the entire Group; in addition to typical services provided by Deutsche Telekom Services Europe, such as financial accounting, human resources services, and operational procurement, Group Services also includes placement services provided by our personnel service provider, Vivento. Vivento is in charge of securing external employment opportunities for employees, predominantly in the public sector. Further units are Group Supply Services (GSUS) for our real estate management and our strategic procurement, and Telekom MobilitySolutions, which is a full-service provider for fleet management and mobility services.

Our Technology and Innovation Board of Management department unites the cross-segment technology, innovation, IT, and security functions of our Germany, Europe, and Systems Solutions operating segments. These include Deutsche Telekom IT, which focuses on the Group's internal IT projects, and our central innovation unit, Product Innovation and Customer Experience (PIC), which works closely with our operating segments to drive topics such as digitalization, big data, software-defined networks, voicification, virtualization, and cloud services. Our Innovation Hub (IHUB) pools all of the expertise required for future innovation projects to ensure we stay flexible and innovative. In the Technology Delivery International (TDI) unit, we pool expertise to position ourselves as a strong partner to the technology units in our national companies and develop, produce, operate, and scale platforms and services across borders from a single source. TDI also harmonizes the planning, development, and operation of products, services, and platforms at the national companies in Europe, taking technological and commercial aspects into account. Strategy & Technology Innovation (S&TI) ensures efficient and customer-centric research and innovation with a focus on mobile and fixed-network communications. Group Security (GSC) is responsible for developing and transforming the Group-wide security strategy.

Changes to the segment and organizational structure in 2022

New limited partners admitted to infrastructure fund DIV II. In August and September 2022, Digital Transformation Capital Partners admitted new investors to the investment company Digital Infrastructure Vehicle II (DIV II). As a result, Deutsche Telekom's share in DIV II decreased from 66.67 % to 41.25 % and the entity was deconsolidated in the third quarter of 2022. Since the deconsolidation, the stake retained by the Group has been included in the consolidated financial statements as an associate using the equity method.

Sale of T-Mobile Netherlands. On September 6, 2021, Deutsche Telekom and Tele2 signed an agreement with WP/AP Telecom Holdings IV, a private equity consortium advised by Apax Partners and Warburg Pincus, on the sale of our subsidiary T-Mobile Netherlands. The transaction was consummated on March 31, 2022 after obtaining the necessary approvals from the authorities and satisfying the other closing conditions. The sale price is based on an enterprise value of EUR 5.1 billion. The cash proceeds – based on our shareholding of 75 % – amounted to EUR 3.6 billion. In financial terms, excluding the partial settlement of intragroup shareholder loans and other intragroup transactions, the transaction resulted in value added of EUR 4.0 billion. The gain on deconsolidation resulting from the sale amounted to EUR 0.9 billion. Until the transaction was closed, the entity had been assigned to the Group Development operating segment.

Increase of the stake in T-Mobile US. As announced, Deutsche Telekom used part of the cash proceeds from the sale of T-Mobile Netherlands to further increase its stake in T-Mobile US and, on April 12, 2022, acquired around 21.2 million shares in T-Mobile US from SoftBank for a purchase price of USD 2.4 billion (EUR 2.2 billion). To this end, Deutsche Telekom exercised a further portion of the stock options it had received from SoftBank in June 2020 to purchase shares in T-Mobile US. This gives a weighted average price of around USD 113 per T-Mobile US share. Upon its completion, the transaction increased Deutsche Telekom's stake in T-Mobile US by 1.7 percentage points.

Share buy-back program at T-Mobile US. On September 8, 2022, T-Mobile US announced that its Board of Directors has authorized a share buy-back program for up to USD 14.0 billion of the company's common stock through September 30, 2023. Repurchases are expected to be made from available cash on hand and proceeds of one or more debt issuances or other borrowings, based on the company's evaluation of market conditions and other factors. The specific timing, price, and size of repurchases will depend on prevailing stock prices, general economic and market conditions, and other considerations. By December 31, 2022, T-Mobile US had bought back approximately 21.4 million own shares with a total volume of USD 3.0 billion (EUR 3.0 billion) under this program.

Joint venture GlasfaserPlus with IFM. On November 5, 2021, Deutsche Telekom had announced that IFM Global Infrastructure Fund – advised by IFM Investors – would acquire a stake of 50 % in GlasfaserPlus, a fiber-optic build-out entity. The sale of a 50 % stake in GlasfaserPlus was consummated on February 28, 2022, after the EU Commission had approved the transaction on January 25, 2022 and the other closing conditions had been satisfied. The sale price came to EUR 0.9 billion, half of which was paid upon completion of the transaction and the other half of which will follow in stages upon achieving certain build-out milestones. The resulting joint venture is to build out an additional 4 million gigabit-capable FTTH lines in rural and development areas by 2028. Following the loss of control pursuant to the IFRSs as a result of the transaction, the GlasfaserPlus entities were deconsolidated as of February 28, 2022. The resulting gain on deconsolidation amounted to EUR 1.7 billion. Until the transaction was closed, the entities had been assigned to the Germany operating segment. The stakes in the joint venture are included in the consolidated financial statements under the Germany operating segment using the equity method.

Reassignment of the security business. Effective July 1, 2022, Deutsche Telekom reassigned its subsidiary Deutsche Telekom Security and the security business in Germany, Austria, Switzerland, Hungary, and Slovakia from the Systems Solutions operating segment to the Germany operating segment in order to maintain a consistent focus on implementing our Group strategy pillar “Lead in business productivity.” Prior-year comparatives in both of the segments affected concerning the development of operations, customer development, headcount development, and order entry were adjusted retrospectively.

(Expected) changes to the segment and organizational structure in 2023

Agreement with DigitalBridge and Brookfield on GD Towers. On July 13, 2022, Deutsche Telekom agreed to sell a 51.0 % stake in GD Towers, comprising its tower assets in Germany and Austria, assigned to the Group Development operating segment, to DigitalBridge and Brookfield. The preliminary sale price is based on an enterprise value of EUR 17.5 billion. The estimated cash proceeds from the transaction are expected to be EUR 10.7 billion. Deutsche Telekom will retain a 49.0 % stake, benefiting from future value upside at GD Towers. Assets and the directly associated liabilities are shown as “held for sale” in the consolidated statement of financial position. The transaction was consummated on February 1, 2023. All necessary regulatory approvals had been duly granted and all other closing conditions met. Deutsche Telekom has largely leased back the sold passive network infrastructure in Germany and Austria, enabling Telekom Deutschland and T-Mobile Austria to continue improving their network leadership.

For further information on the agreement with DigitalBridge and Brookfield on the Group’s cell tower business in Germany and Austria, and on the disclosure of GD Towers as a discontinued operation, please refer to the section “Changes in the composition of the Group and other transactions” in the consolidated financial statements.

Agreement with Cogent to sell the U.S. wireline business. On September 6, 2022, T-Mobile US reached an agreement with Cogent Infrastructure (Cogent) on the sale of T-Mobile US’ fiber-optic-based wireline business. Under the agreement, Cogent will take over all shares in the entity that holds all of the assets and liabilities related to the former Sprint’s fiber-optic-based wireline network. The sale price is USD 1 and is subject to customary adjustments laid down in the purchase agreement. In addition, upon completion of the transaction, T-Mobile US undertakes to enter into a separate agreement on IP transit services, according to which T-Mobile US will pay a total of USD 700 million to Cogent. The transaction is subject to regulatory approval as well as other closing conditions. The assets and liabilities of the wireline business have been reported in the consolidated statement of financial position as “held for sale” since September 30, 2022. The transaction is expected to be completed by mid-2023.

Group strategy

Our vision: Leading Digital Telco

In 2021, we adjusted our Group strategy after seven years and set ourselves a new ambition: **Leading Digital Telco**. And we remain very successful on the market: Deutsche Telekom is by far the leading telecommunications company in Europe in terms of market capitalization, revenue, and earnings (adjusted EBITDA AL) (as of December 31, 2022). Our Group continues to grow, as confirmed by our most important financial performance indicators. We raised our full-year guidance for 2022 as many as three times in the course of the year (in terms of adjusted EBITDA AL, free cash flow AL (before spectrum), and adjusted earnings per share). Understanding of the strategy and support for it among the workforce remain at a record high level of 81 % (pulse survey in November 2022) and in fact increased by another 2 percentage points compared with the prior year. However, few if any industries face change on the same scale as the telecommunications industry. And digitalization is the central catalyst for the key trends that have a long-term impact on our ecosystem:

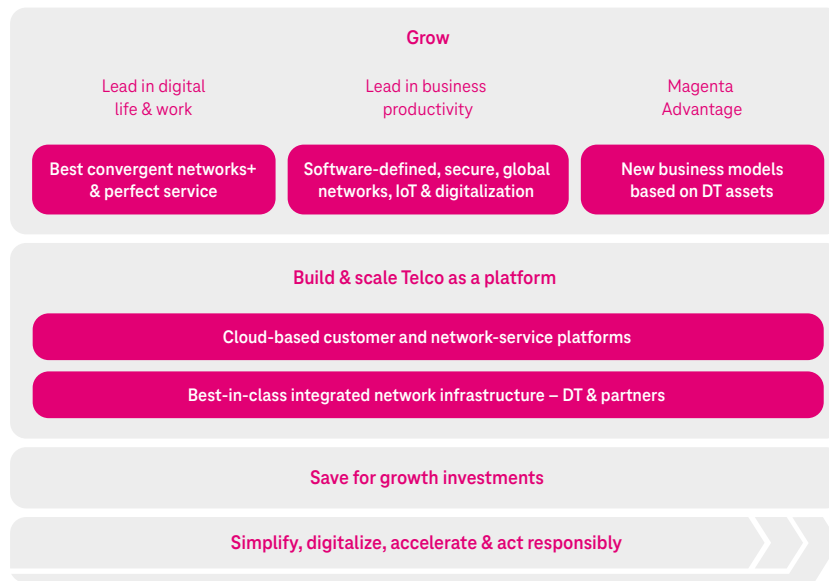
- Data traffic continues to grow worldwide, driven by the quickening pace of digitalization in many aspects of personal and professional life. Correspondingly, demand for high-speed broadband – over the fixed and mobile networks – is also on the rise. According to forecasts by Ericsson, average data use worldwide per smartphone will increase from 9.1 GB per month in 2020 to more than 19 GB per month in 2023, while the number of fixed wireless access connections to the internet will increase globally from 72 million in 2020 to more than 131 million in 2023.
- Digitalization is shaping demand among consumers and business customers alike: Consumers want their product and service experiences to be fully customized to their personal needs, context-sensitive, and to work seamlessly. For business customers, requirements are driven by the new way of working: digital, hybrid, and app-centric. They expect secure connectivity as well as flexible service and product models that integrate easily and securely into workflows – and all from a single source and “as a service.”
- We are seeing companies from other industries pushing onto the market with lean, software-defined production models. Providers such as Google, Microsoft, and Amazon Web Services are expanding into the global connectivity field and increasingly providing network functions in their cloud environments. More and more, they are positioning themselves as vendors of connectivity services not only to telcos, but also as partners for business customers.
- CPaaS (communications platform as a service) companies offer user-friendly communications services on their own communications platform – without having their own networks. They provide developers and business customers with standard telecommunications services (calls, text messages) and new network functions through standardized application programming interfaces (APIs). Network connectivity for this is guaranteed through wholesale agreements with telecommunications companies. This shifts access to end customers from telcos to the CPaaS companies.
- Alternative network providers and technologies (e.g., satellite connectivity) are gaining in relevance and can be an opportunity to extend terrestrial telecommunications networks (e.g., network coverage in sparsely populated areas). But continued fragmentation in the connectivity market also brings ever-greater complexity. Especially among business customers with international footprints, demand is growing for a one-stop shop offering global network orchestration and a network customized to individual business cases.
- At the same time, the parallel build-out of broadband and mobile infrastructure (optical fiber, 5G) calls for telecommunications companies to commit to high investments and find innovative approaches to implementation, for instance by using third-party infrastructure or partnering with investors.
- Sustained global population growth, and growing resource consumption are putting a strain on available resources. It is thus imperative that we find a sustainable, more ecological way of doing business and act with a greater focus on social responsibility. At the same time, geopolitical tensions in consideration of the globalized world economy and the increasing use of digital technologies are creating supply chain bottlenecks and putting guaranteed access to network components and energy supply at risk.
- The acquisition of new skills and expertise is another vital aspect of digital transformation. The challenge here lies in quickly building up a critical mass of digital talent. Flexible work models, global recruitment processes, and responsible corporate action are gaining relevance.

In the Western tech-sphere, we are well positioned to implement our **Leading Digital Telco** strategy. No other telecommunications company has a comparable footprint with its own networks on both sides of the Atlantic: in Europe and the United States. We are a global enterprise with a considerable presence in Europe, European roots and values, and an extremely strong business in the United States. Our goal is clear: we want to align ourselves long-term with the needs of our customers and transform ourselves into a digital company to hold our own against new competitors and continue our growth course. Our future growth is based on three pillars: “Lead in digital life & work,” “Lead in business productivity,” and “Magenta Advantage.” Building and operating the best convergent networks remains at the core of our strategy and is an important driver for our growth areas. We want to “build and scale the telco as a platform” and we are investing both in our network infrastructure and in establishing cloud-based service platforms. We leverage our international footprint to generate synergies across the Group and to carry weight alongside the global tech giants.

The two areas of operation, “Save for growth investments” and “Simplify, digitalize, accelerate & act responsibly,” support our growth target and provide the guidelines for our actions. Our Group strategy does not aim to micromanage all local units, but to provide a strategic framework and to utilize local strengths (networks, competitive standing). We measure the success of our strategy on the one hand by means of specific digitalization targets: by 2024, for example, we want to increase the first time right rate in the provision of broadband lines in Germany and Europe to at least 95 % and reduce the time to market in IT to two months in Germany and to one month in Europe. On the other hand, success can be seen in our long-term competitiveness and as such is reflected in the established key financial figures: Recently, at the 2021 Capital Markets Day, we set an annual growth target (Group CAGR) of 1 to 2 % for revenue and 3 to 5 % for adjusted EBITDA AL by 2024.

For further information on our ambition levels, please refer to the section “[Finance strategy](#).”

Group strategy: Leading Digital Telco



Strategic areas of operation

Lead in digital life & work: Best convergent networks+ & perfect service

Our aspiration is to offer customers the best network experience, anytime, anyplace – whether at home or at work, our network should work seamlessly and across all technologies. That’s why we market fixed-network and mobile communications in **convergent products** (fixed-mobile convergence (FMC)). By the end of the reporting year, some 5.6 million customers in Germany had opted for MagentaEins; that is around 300 thousand more than in the prior year. The national companies of our Europe operating segment won over 790 thousand new customers for MagentaOne and similar FMC offerings in 2022. To continue on this path of growth, we work continuously to improve our convergent portfolio. A key component for this in the 2022 financial year was also the further enhancement of our mobile offering to additionally provide mobile communications to customers who have previously only had a fixed-network product with us. The new MagentaMobil portfolio offers larger data volumes as well as attractive price benefits through an offer of additional cards (MagentaMobil PlusKarte). The more SIM cards are added onto the main contract, e.g., for family members or friends, the lower the average price per person. But it is not just in Europe, but also in the United States that we are offering more broadband products for the home, based on our mobile network. In the 2022 financial year, we won 2.0 million new customers with our high-speed internet offering.

In pursuit of our goal to become the Leading Digital Telco, we want to offer more than simply the best connectivity: what really counts for us is the **network experience**. For this reason we offer our customers additional services that turn our network leadership aspiration into a first-hand experience. We reached some key milestones in this regard in the reporting year. Our MagentaTV product has been repositioned throughout our entire European footprint to aggregate linear television, including extensive features, with access to content from the biggest video-on-demand providers, and exclusive content. In 2022, we further enhanced the TV experience: In Germany, for example, we were the only provider with the broadcast rights to all the matches of the 2022 Soccer World Cup. In addition, we brought a new rate plan to market with MagentaTV MegaStream, which integrates linear television and the Megathek library with Disney+, Netflix, and RTL+. Our national companies in Europe further rolled out the Android-based TV platform with a Deutsche Telekom-specific user interface to deliver an even more personalized user experience (2022: Austria, Croatia, and Poland). The addition of 121 thousand TV customers in Germany and around 112 thousand in our European subsidiaries shows that we are on the right track.

Of equally high priority for us is ensuring **seamless product integration** across our portfolio. To this end we launched our own operating system HomeOS in 2021, as a “linking element” for the digital household. In the reporting year alone, we developed 12 new use cases (e.g., integration of weather and news applets, the digital voice assistant Frag Magenta, or the configuration of smart-home routines via MagentaTV).

Perfect **customer service**, supported by digitalization, continues to be another powerful lever to help set us apart from the competition. That is why we offer our customers a huge array of service tools, such as a digital home service (phone or on-site advice on all home network issues), our callback service, or switching advice. In addition, we place great importance on finding a quick solution to our customers' issues. In 2022, we increased our first-call resolution rate again, that is the customer issues we resolve directly at the first point of contact (56.1%, up +0.1 percentage points against 2021). In addition, we further developed the OneApp platform for a digital sales and service experience in our European national companies and in Germany. The OneApp platform not only improves the customer experience (e.g., by setting up and managing the router or monitoring internet usage behavior in the home network via the app), it also enables us to monetize our offerings (e.g., Magenta Moments as a new section for our loyalty program and in-app coupons, upselling of fixed-network/fiber-optic contracts). Our ratings validate our efforts in this regard, including the Connect service tests (overall score of "very good" in the hotline and service app tests in Germany and Austria, issue 10/2022). What's more, according to Computer Bild (issue 24/2022), with Frag Magenta we "employ" the best digital assistant in Germany – not just in the telecommunications industry, but across all industries. In the United States, too, we are reaping the rewards of our focus on customer-centricity: numerous surveys rank T-Mobile US ahead of its competitors for service quality (e.g., the J.D. Power study "Wireless Customer Care Mobile Network Operator Performance" rated T-Mobile US the mobile carrier with the best customer service in the United States for the 10th time in succession).

We measure **customer satisfaction** using the globally recognized TRI*M method. We use the results of this performance indicator to improve our customer contact processes, and our products and services. At the same time, we determine the loyalty of our customers towards Deutsche Telekom. The results are presented as a performance indicator, the TRI*M index, which ranges between minus 66 and plus 134 points. At the end of the reporting year, this indicator (excluding T-Mobile US) came in at 76.0 points versus an adjusted value of 72.6 points at the start of the year (both determined on a comparable basis). For the Germany and Systems Solutions operating segments in particular, the values achieved put us in a leading position compared to the relevant benchmark and we intend to maintain this position in 2023. We are aiming for a slight improvement in the Europe operating segment.

Lead in business productivity: Software-defined, secure, global networks, IoT & digitalization

In the reporting year, we maintained our market-leading position (in terms of revenue) as a provider of telecommunications services for **business customers** in the Germany operating segment and posted growth slightly above the prior-year level. As a trusted partner, we drive forward the digitalization of our customers based on global, secure connectivity, flexible software-based networks, and end-to-end security solutions. And in future, these activities will increasingly be based on integrated offerings (combining fixed network, mobile communications, and IT) and further strengthen our portfolio in the IT environment. The MagentaBusiness Collaboration product family, for example, already combines flexible communications solutions and tools for collaborative work in a seamless overall solution. In 2022, we introduced, among other products, the Microsoft Teams | X solution and we will further enhance our offering going forward. However, integrated offerings also require digitalization expertise beyond connectivity (e.g., presales, integration), since small and medium-sized enterprises in particular are increasingly looking for solutions from a single source. In the reporting year, we continued to post organic growth in IT revenue from business customers in our Germany operating segment. In our national companies in Europe, too, revenue with business customers remained stable, primarily on the back of a stable development in mobile communications. The IT business, which had declined in the prior year, recorded growth in 2022. Demand for our productivity, cloud, smart cities, and security solution portfolio continued to grow again in 2022.

Going forward, we want to remain the partner of choice for multinational corporations with cross-border **connectivity needs**, and to this end are investing in robust, global fixed-network and mobile connectivity and providing a one-stop shop for connectivity through the orchestration of our own networks and those of our partners. In 2022, we entered into a strategic partnership with the software company Teridion, which enables us to offer our business customers secure connectivity to network their locations across the globe. The partnership and related investment in Teridion by Deutsche Telekom underlines how important the issue of software-based networks is for us. In the medium term, we want to respond to changing customer needs with fully cloud-based, modular network services and dynamically adapt our networks. APIs will even make it possible in future to automatically manage individual network parameters in real time. To this end, over the coming years we plan to radically overhaul our own network and IT landscape, transforming it into a modular, software-defined production environment with integration capabilities for customized app and IT landscapes.

As major topics like the **Internet of Things (IoT)** and **cybersecurity** become more relevant, security and network solutions (network, IT, and cloud computing) are beginning to merge into highly secure, end-to-end solutions. Security functions which were once purchased separately are increasingly becoming part of the connectivity product or of security solutions, like new-generation firewalls that are already integrated into some SD-WAN solutions, and Secure Access Service Edge (SASE) suites that deliver SD-WAN in combination with cloud and application security from a single source. We will continue to develop the core elements of our B2B portfolio, comprising our Multiprotocol Label Switching (MPLS) solutions and SD-WAN products, holistically, taking account of network and security aspects. Security is an integral component of every one of our products and services (e.g., campus networks, IoT) – and that goes for every link in the communication chain: from the user via the terminal equipment, Wi-Fi/mobile communications/LAN, through to access and corporate networks, transport networks, and data centers. "Security by Design" is our goal here – from development and operation to management of the network services by us and our customers. In order to implement this consistently, Deutsche Telekom reassigned its subsidiary Deutsche Telekom Security and the security business in Germany, Austria, Switzerland, Hungary, and Slovakia from the Systems Solutions operating segment to the Germany operating segment effective July 1, 2022.

SDG 16 STRUCTURE



The business with “traditional” IT outsourcing services for **corporate customers** has been in decline for the last few years now, mainly due to intense competition on the market driven by new cloud-based services and providers. The strategy of our Systems Solutions operating segment is to become the “leading European vertical full-service IT player.” The strategy concentrates in particular on the DACH region, where we already lead the markets (in terms of revenue). We focus on the core customer requirements of digitalization: advisory, cloud services, and digital solutions. For selected industries (automotive, healthcare, public sector, and public transport), we additionally offer vertical, industry-specific solutions. The newly established entrepreneurial set-up for the portfolio units aims to make the business scalable in an even shorter time frame and to accelerate growth. We are also relying more and more on partnerships. In particular, we plan to build up near- and offshore capacities.



Magenta Advantage: New business models based on DT capabilities

In our core business, we create special assets and capabilities, including, for example, more than 245 million mobile customers, more than 8 million TV customers, and access to the largest companies in the world across industries. We call the edge we can achieve through these assets and capabilities Magenta Advantage. Going forward, we want to use this advantage in a targeted way to develop new, digital business models to complement our core business. For example, we would like to harness our “digital reach” to make exclusive offers from partners available to our customers, to reward their loyalty and – where possible – to generate additional revenue. We laid the foundations for this in 2022. We built up our network of partner companies, incorporated them into our new app section Magenta Moments, and so far, we have released 37 exclusive partner offers (e.g., Disney+, GetYourGuide, Rituals) for our app users. In the future, we want to build up further capabilities for data analysis and segmentation and continuously improve the personalization of our offers. The core of our brand promise, “Reliability, security, and trust,” remains the same and protecting our customers’ data and privacy is our top priority. On top of this, we also use our Magenta Advantage to invest locally in digital business models. Examples of these are the online delivery service Box and the payment service Payzyz in Greece.

Build and scale telco as a platform

Our growth areas are based on our networks and our technology, which together form the core of our value creation. That is why we are systematically building out and interlinking our fixed and mobile networks because we want to offer our customers the fastest possible connection at top quality, anytime, anyplace. Group-wide, in 2022, we invested EUR 21 billion (not including spectrum investment) primarily in building and operating networks, with EUR 5.7 billion of this figure spent in Germany alone. This makes us the biggest single investor among all of our German competitors. In pursuit of outstanding quality and an even quicker and more efficient network build-out, we are also striking out in new directions, for example, with the use of artificial intelligence (AI) to ensure infrastructure is built out in line with demand. Integrated management improves the capacity utilization of our infrastructure and increases efficiency in operations and maintenance.

Fiber optic-based **fixed networks** are the basis for integrated network experiences. We are working flat out to build our fixed-network infrastructure with state-of-the-art optical fiber. As a consequence, we increased the number of broadband customers in the Europe operating segment by 4.8 % compared with the end of 2022 to 6.7 million. A total of around 8.1 million households (coverage of 32.0 %) were provided with the option by our national companies to subscribe to a direct connection to our fiber-optic network with speeds reaching up to 1 Gbit/s. In Germany, we made fiber-optic lines (FTTH) available to around 2 million more households and companies by the end of 2022. Looking ahead, we are set to substantially increase the pace of the fiber-optic build-out further. By 2030, every household and every business in Germany is to have a fiber-optic line. Our aspiration is for Telekom Deutschland to build the majority of these. By the end of 2024, we are set to make more than 10 million fiber-optic lines available. To this end we will strengthen our team, employing 1,000 additional fiber-optic experts and fitters. In addition, we have agreed partnerships with other companies that will contribute to our objectives (e.g., collaboration with Glasfaser Ruhr, with the city of Münster’s public utility company Stadtwerke Münster, and with 175 municipalities in the gigabit region of Stuttgart). But urban centers are not the only ones to benefit from the network build-out: we also plan to cover a total of 8 million households in rural areas with optical fiber by 2030. Together with the Australian investor IFM, the fiber-optic build-out company GlasfaserPlus is to add a further 4 million households in rural areas to this target by 2028.  

But our competitors also need to play their part. Deutsche Telekom is building out the network on the basis of open access. The new networks are open for use by competitors.  

The positive response shows that our efforts are paying off. In Germany, we took the #1 spot again in 2022 for the best fixed-network offering (Connect, issue 08/2022) and the best fixed-network internet provider (Chip, issue 06/2022). In addition, Magenta Telekom won best in test in Austria for its “outstanding” internet services (Connect, issue 10/2022).

In **mobile communications**, we set ourselves apart from our competitors with the multi-network-test-winning quality of our network. We operate over 100,000 mobile communications antennas across Germany with LTE coverage of 99 %. Our national companies in Europe cover 98.2 % of the population, or around 110 million people, with LTE. With the **fifth-generation mobile communications standard (5G)**, we are creating a highly reliable mobile network with extremely low latency and high data throughput. Over 80,000 antennas now transmit 5G across Germany. As of the end of 2022, around 7,700 of these antennas were using the fast 5G spectrum in the 3.6 GHz band. By the end of 2022, 94.8 % of the population of Germany was already covered by our 5G network. By the end of 2025, 5G is set to cover 90 % of Germany, reaching 99 % of the population. As of the end of 2022, our national companies covered 47.4 % of the population in our European footprint with 5G. In the United States, at year-end we covered 325 million people via the 600 MHz band, 263 million of whom can use Ultra Capacity 5G in the 2.5 GHz band and millimeter wave spectrum.

For this reason, we regularly come out on top in independent network tests: Our German network once again won the “big three” network tests in 2022: by Connect (issue 01/2023 – winner for 12th time in succession), Chip (issue 01/2023), and Computer Bild (issue 25/2022). Magenta Telekom (Austria) won the Connect mobile network test for the fifth time in succession (issue 1/2023), receiving the top rating of “outstanding” for the fourth time in succession. In the Chip mobile network test, Magenta Telekom won again, gaining the top rating of “very good” in the categories Internet, Telephony, and 5G. We also won awards for the mobile networks of our national companies in Greece (Ookla® Speedtest and Umlaut “Best in Test”) and once again in Croatia (Umlaut). In the United States, we have the fastest and most reliable 5G network with the most constant speed and greatest availability (Ookla® Speedtest, Umlaut 5G Network Performance Audit Report, Umlaut 5G network test).

Our goal is to use the **best-in-class integrated network infrastructure** for our products and services. That is why we are complementing our own infrastructure with that of strategic partners, while also considering alternative access networks (e.g., satellites or high-altitude platform systems, HAPS). In August 2022, for instance, T-Mobile US and SpaceX announced joint plans that will enable our U.S. subsidiary in future to bring cell phone connectivity to its customers in parts of the United States previously without cell tower coverage using SpaceX’s Starlink satellites. With this technology, T-Mobile US is planning to provide coverage for text messages and participating messaging apps, practically everywhere in the United States, Puerto Rico, and territorial waters. The next step for the two companies will be to drive forward the build-out of voice and data coverage.

The delivery of connectivity and services based on our own and our partners’ infrastructure is reliant on technology- and domain-agnostic orchestration capabilities. These are found in a separate technical control layer above the actual infrastructure, which allows us to manage the “network of networks.” We are modernizing our NT/IT architecture to ensure the necessary orchestration capabilities are in place. Our focus is on leveraging the full potential of network automation, cloudification, and disaggregation to make our production considerably faster, more flexible, and more cost-efficient. Disaggregation, or the separation of hardware and software, makes it possible to add new suppliers. Today, around 80 to 90 % of all suppliers in our infrastructure are large, traditional companies. Going forward, we want to take into consideration even more smaller, innovative suppliers, enabling us to integrate innovations into our networks more quickly and flexibly and thus also making them available to our customers.

We are adapting our production platform to meet the customer needs of the future, by building **cloud-based, scalable, modular platforms** and opening up access to selected parts of these platforms to third parties (e.g., service providers and app developers) via open interfaces (APIs). Our goal is to make connectivity, services, and data (e.g., location data, connection conditions, and user behavior) combinable with new applications as needed. The benefits of this architecture include shorter development cycles, faster exploitation of revenue potential, more automated and significantly more cost-effective production, scalability across business units and borders, and a substantially better customer experience by virtue of personalized digital interactions.

Supporting areas of operation

Save for growth investments

Future growth requires adequate investment. To this end, we are investing in our own innovativeness as well as integrating successful new developments from outside our Company. Thanks to our cost discipline, we generate the funds we need to finance this investment and safeguard our competitiveness. For us, the goal of becoming Leading Digital Telco also means being the leading telecommunications provider in terms of efficiency. The digital transformation is key to further enhancing cost efficiency throughout our entire value chain: from the customer interface, to our production processes, through to the management of our own infrastructure and supply chains. We will therefore systematically continue on this path of cost transformation.



We manage our **investment portfolio** with the aim of enhancing value. Value orientation for us also means realizing value when the time is right and the conditions attractive. In this context, the sale of T-Mobile Netherlands was completed in 2022. We used part of the resulting cash inflow of EUR 3.6 billion to further increase our stake in T-Mobile US (by 1.7 percentage points). After examining strategic options, we also signed an agreement with DigitalBridge and Brookfield in the reporting year to sell a 51% stake in the GD Towers business entity, which operates the cell tower business in Germany and Austria in the Group Development operating segment. Deutsche Telekom will retain a 49.0% stake, benefiting from future value upside at GD Towers. The transaction was consummated on February 1, 2023. We are also weighing plans to invest a portion of the funds received to further increase our stake in T-Mobile US. This is in line with our strategic decision to increase our stake in T-Mobile US to more than 50% and secure the existing control over the U.S. subsidiary in the long term.

Simplify, digitalize, accelerate & act responsibly




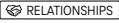
Simplicity in our offers and in our organization makes the digital transformation of our core business easier. In this way, we increase our **implementation speed** – both in the interaction with customers and in the implementation of new, strategic initiatives. This is why we want to become simpler, more digital, and ultimately more agile.

There are two main thrusts to our pursuit of **simplicity**. First, we want to offer our customers intuitive products and simple rate plans, like MagentaTV MegaStream. Going forward, we want to significantly further reduce product complexity. Our ambition is for our services to be available around the clock via a single click. Thanks to an IP migration which has been successfully concluded, we can now remotely perform setup and maintenance work to the line in increasingly more households – depending on the router. The technical provisioning of nine out of ten broadband lines is already successful on the first attempt. Second, we want our internal operation to be as efficient as possible, i.e., in terms of time and costs. We are making promising progress with the introduction of greater agility into our IT activities. For example, since 2020 we have increased the development speed for new software or software-driven products in Germany and Europe by around 30%. Today, our average time to release for purely software-based adaptations is around 2.4 months in Germany (e.g., personal customer dialog for consumers, digital order management for business customers) and around 1.4 months in Europe. We want to cut these times even further and achieve a time-to-market of 1 month in Europe and 2 months in Germany by 2024. Above and beyond this, we will continue to scrutinize our organization, processes, and decision-making procedures and further optimize them in future, wherever possible.

The **digitalization** of our core business is helping us to improve customer experience and increase our efficiency. Our sales and service apps are now firmly established in Germany and Europe as key digital customer interfaces and we have worked to continually add more services. Our European national companies interact with around 67% of customers digitally via the service apps. In Germany, the figure stands at 42% following migration to the OneApp platform. In connection with the migration, the collection of app-specific metrics (e.g., app penetration) was harmonized in Germany to ensure Europe-wide comparability within the Group. We are optimistic that penetration will return to its former strength as we further expand the functionalities of the MeinMagenta app. Another factor that plays into an outstanding and, above all, personalized experience is a 360° view of our customers across all channels, both online and offline. Magenta View is our front-end platform for all employees with direct customer contact, delivering all necessary customer data from a single source. At the end of the reporting year, almost 25,000 colleagues in Germany were benefiting from Magenta View. Long term, our plan is to digitalize virtually all value creation stages in their entirety. To this end, we are systematically expanding our expertise in innovative technologies like artificial intelligence. Data-based analyses are already helping us to maintain our hardware more proactively, understand customer needs better, and manage our networks more efficiently.





However, simplicity and digitalization also call for new **skills and a cultural change**. In 2022, we continued our specific offering of programs focused on future issues, the Explorer Journeys. With these programs, we want to prepare as many employees as possible for the skills that will be required in the future. Since its launch in 2020, more than 10,000 employees have registered for courses in areas such as software development, AI, data analytics, digital marketing, and user experience (UX). With our “youlearn” initiative – aimed at entrenching self-paced learning in our everyday working life – we continued to drive forward our employees’ options for upgrading their skills. What is more, we provide our employees with a high-quality training service in the form of Percipio (an intelligent learning platform also dubbed the “Netflix of learning”) and Coursera (a provider of digital training courses offered by prestigious universities), from which more than 178,000 employees benefit. Since 2021, we have been enabling our employees to increase their participation in the Company’s success through the share program Shares2You. In the reporting year, 37,911 employees took advantage of the program. That our efforts are paying off is validated by our employee satisfaction levels: The question on Mood, as before, remains at the very high level of 81%.  

For further information about our people strategy, please refer to the section “Employees.”

In parallel, we fulfill our **responsibility** to society by systematically aligning our core business processes with the principle of sustainability. We revised and further refined our sustainability strategy in the reporting year: climate protection, circular economy, diversity and team performance, as well as digital responsibility and participation are our four key action areas. As well as our target of making our entire value chain climate-neutral by 2040 at the latest, we want to achieve a 100 % circular economy for terminal equipment by 2030. We have taken back over 4.5 million devices in Germany and Europe either to refurbish or to send them directly for recycling, so that we and our customers actively help conserve resources and protect the climate. Deutsche Telekom's suppliers, too, are to achieve a fully circular economy for technologies, devices, and network technology by 2030. Moreover, in 2020 we introduced a sustainability standard for our packaging, removing single-use plastics in favor of recyclable materials and environmentally friendly colorings. All new Telekom-branded (or "T-branded") devices and more than two thirds of the new packaging for smartphones that we source from our suppliers meet these criteria. Since 2021, 100 % of our electricity requirements for all Group units have been met from renewable sources. We plan to become twice as energy efficient by 2024, based on the data volume in the network in relation to the power consumed in this context. To help us achieve this goal, we are decommissioning legacy platforms – including PSTN, migrating to more efficient technology – such as the switch from 3G to 5G, using highly efficient data centers, and deploying AI. From a long-term perspective, we will also achieve savings from the migration from copper to fiber-optic technology. These measures will enable us to maintain stable power consumption in Germany and Europe through 2024, despite rapidly rising data volumes, growing numbers of active network components, and the further densification of our networks. Above and beyond this, we are supporting a responsible approach to digitalization. Under the motto "No hate speech," Deutsche Telekom is supporting, for example, projects for media literacy in society and against cyberbullying. Deutsche Telekom has taken its social responsibility seriously through various crises: whether with technical support at the start of the coronavirus pandemic or with free SIM cards for refugees from the war in Ukraine.    

For further information on our sustainability strategy, please refer to the section "[Combined non-financial statement](#)."

Our strategy is expressed succinctly in our ambition to become the **Leading Digital Telco**:

- We want to be a **leader** in terms of digital living and working, and in the implementation of advances in productivity for our business customers. Because only when we lead can we grow and meet the demands of our investors in the long term.
- We want to better utilize our existing assets and skills not only in our core business, but also to develop new, **digital business models (Magenta Advantage)**.
- The key technical driver for our growth areas is "Telco as a platform": the **best integrated network infrastructure** – provided by us and by partners – as well as cloud-based customer and network-service platforms. The basis for this is and remains our ongoing commitment to building out the fiber-optic and 5G networks.  
- We promote continued growth by carefully managing our **financial resources** and **systematically transforming** the Company to be simple, digital, and agile in every sense.
- We play a responsible and active role in **society**. We are a partner, not just at a societal level, but also at a political one, and we work in the interests of ensuring the open, forward-looking development of all countries in which we are active.  

Finance strategy

We announced our finance strategy for the years 2021 through 2024 at the [Capital Markets Day](#) in May 2021. Deutsche Telekom continues to pursue an attractive and reliable finance strategy. Through 2024, we want to further raise our forecast for growth from the past few years.

For further information on the expected business development up to 2024, please refer to the section "[Forecast](#)."

At the Capital Markets Day in 2021, we communicated the following ambition levels for the period through 2024:



^a Before dividend payments and spectrum investment.

^b Our ambition level was determined in the 2020 financial year based on the average U.S. dollar exchange rate at the time of USD 1.14.

^c Compound annual growth rate.

We also expect revenue to increase by an average of 1 to 2 % per year and adjusted EBITDA AL by an average of 3 to 5 %. Based on the results generated in 2021 and 2022, as well as our forecast for 2023, we believe we are on the right path to achieve these targets.

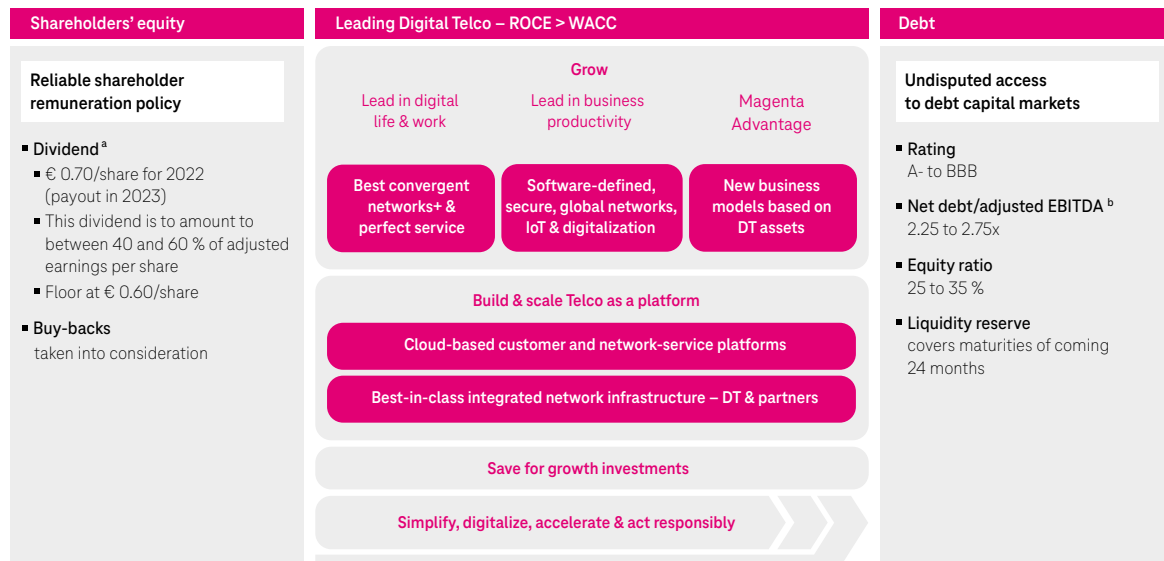
Another part of our finance strategy is to achieve our target financial ratios – relative debt (ratio of net debt to adjusted EBITDA) and equity ratio – along with a liquidity reserve that covers our maturities of the coming 24 months at least. With these clear statements we intend to maintain our rating in a corridor from A- to BBB and safeguard undisputed access to the capital market.

There is a sustainable dividend policy for shareholders, which is subject to approval by the relevant bodies and the fulfillment of other legal requirements. Starting from the 2021 financial year, the amount of the dividend is based on a dividend payout ratio of 40 to 60 % of adjusted earnings per share, with a lower limit fixed at EUR 0.60 per dividend-bearing share. For the 2022 financial year, as announced in November 2022, we intend to propose a dividend of EUR 0.70 for each dividend-bearing share. This equates to 38 % of adjusted earnings per share. As adjusted earnings per share benefited from a large number of positive one-time effects in the reporting year in connection with the measurement of derivatives – in particular from the forward transaction to hedge the price of acquiring shares in T-Mobile US in the future, and the stock options to purchase shares in T-Mobile US – as well as income from the measurement of provisions as a result of the sharp rise in interest rates, we consider our proposed dividend to be consistent with our dividend policy, which is based on the long-term sustainable earnings trend. We thus offer our shareholders both an attractive return and planning reliability. As in previous years the dividend for the 2022 financial year will once again be paid out without deduction of capital gains tax.

We will also take share buy-backs into consideration.

Total capital expenditure is also to remain high in the next few years. The scope for investment is to be used to further roll out our broadband infrastructure and to accelerate the transformation of the Company. In mobile communications, the infrastructure build-out will focus on the LTE and 5G standards and, in the fixed network, mainly on our accelerated fiber-optic build-out. The finance strategy supports the transformation of our Group into the Leading Digital Telco. In order to generate a sustainable increase in value, we intend to earn at least our cost of capital. We plan to meet this target by optimizing the utilization of our non-current assets on the one hand, and pursuing strict cost discipline and profitable revenue growth on a sustainable basis, on the other.

Our finance strategy through 2024



^a Subject to approval by the relevant bodies and the fulfillment of other legal requirements.
^b Deviation from the target range for a short period as a result of the business combination of T-Mobile US and Sprint until year-end 2024.

In order to set and achieve our strategic goals more effectively, we pursue a Group-wide, value-oriented performance management approach, which we explain in the following section.

Management of the Group

We are committed to the concept of value-oriented corporate governance. We want to strike a balance between the contrasting expectations of our stakeholders so that sufficient funding is available for an attractive dividend, deleveraging, responsible staff restructuring, and new investment in a positive and sustainable customer experience.

- **Shareholders** expect an appropriate, reliable return on their capital employed.
- **Providers of debt capital** expect an appropriate return and that Deutsche Telekom is able to repay its debts.
- **Employees** expect jobs that are secure, prospects for the future, and that any necessary staff restructuring will be done in a responsible manner.
- **“Entrepreneurs within the enterprise”** expect sufficient investment funding to be able to shape Deutsche Telekom’s future business and develop products, innovations, and services for the customer.
- **Society** expects us to do everything within our power to protect the environment, encourage a fair and democratic co-existence, and shape the digital transformation in a responsible manner. [SDG 17](#) [RELATIONSHIPS](#)

Performance management system

We use a specific set of performance indicators to reliably and transparently measure success. The following tables and information provide an overview of our key financial and non-financial performance indicators.

Financial performance indicators

		2022	2021	2020	2019	2018
Net revenue	billions of €	114.4	107.8	100.1	80.5	75.7
Service revenue ^a	billions of €	91.9	83.1	78.1	n.a.	n.a.
EBITDA AL (adjusted for special factors) ^b	billions of €	40.2	37.3	35.0	24.7	23.1
Profit (loss) from operations (EBIT)	billions of €	16.2	13.1	12.8	9.5	8.0
Earnings per share (adjusted for special factors)	€	1.83	1.22	1.20	1.04	0.96
ROCE	%	4.5	4.1	4.6	5.1	4.7
Free cash flow AL (before dividend payments and spectrum investment) ^{b, c}	billions of €	11.5	8.8	6.3	7.0	6.1
Cash capex (before spectrum investment)	billions of €	(21.0)	(18.0)	(17.0)	(13.1)	(12.2)
Rating (Standard & Poor's, Fitch)		BBB, BBB+	BBB, BBB+	BBB, BBB+	BBB+	BBB+
Rating (Moody's)		Baa1	Baa1	Baa1	Baa1	Baa1

^a The definition of “service revenue” was not applied consistently Group-wide for the years prior to 2020.
^b Comparatives for 2018 were calculated on a pro forma basis for the key performance indicators redefined as of January 1, 2019 following the introduction of the IFRS 16 accounting standard.
^c Before interest payments for zero-coupon bonds and before termination of forward-payer swaps at T-Mobile US (both in 2020).

Broader definition of service revenue. Since January 1, 2022, our service revenue additionally includes certain customer charges in the United States operating segment – primarily in order to create better comparability with T-Mobile US’ service revenue as determined in accordance with U.S. GAAP – and other revenue of lesser significance, mainly in the United States and Systems Solutions operating segments. This increases service revenue by EUR 1.5 billion in the reporting year. The prior-year comparatives were not adjusted retrospectively.

Presentation of GD Towers according to the management approach. On July 13, 2022, Deutsche Telekom reached an agreement with DigitalBridge and Brookfield on the sale of a 51.0 % stake in GD Towers. This transaction was consummated on February 1, 2023. As a result, the GD Towers business entity has been recognized in the consolidated financial statements as a discontinued operation since the third quarter of 2022. However, in the combined management report we continue to include the contributions by GD Towers in the results of operations according to the management approach. The following table provides a reconciliation of the amounts recognized in the consolidated income statement to the financial performance indicators relevant for the management approach:

millions of €									
	2022	Of which: continuing operations	Of which: discontinued operation	2021	Of which: continuing operations	Of which: discontinued operation	2020	Of which: continuing operations	Of which: discontinued operation
Net revenue^a	114,413	114,197	216	107,811	107,610	201	100,139	99,946	192
Service revenue^a	91,947	91,947	0	83,130	83,130	0	78,107	78,107	0
EBITDA	43,986	43,049	937	40,539	39,671	868	38,633	37,900	733
Depreciation of right-of-use assets	(6,507)	(6,406)	(101)	(5,547)	(5,348)	(199)	(4,530)	(4,375)	(156)
Interest expenses on recognized lease liabilities	(1,489)	(1,452)	(37)	(1,099)	(1,074)	(25)	(925)	(904)	(20)
EBITDA AL	35,989	35,191	798	33,893	33,249	644	33,178	32,621	557
Special factors affecting EBITDA AL	(4,219)	(4,213)	(6)	(3,437)	(3,432)	(5)	(1,839)	(1,838)	(1)
EBITDA AL (adjusted for special factors)	40,208	39,404	804	37,330	36,681	649	35,017	34,459	558
Depreciation, amortization and impairment losses	(27,827)	(27,635)	(192)	(27,482)	(27,091)	(391)	(25,829)	(25,534)	(295)
Profit (loss) from operations (EBIT)	16,159	15,414	745	13,057	12,580	477	12,804	12,366	438
Profit (loss) from financial activities	(4,455)	(4,437)	(18)	(5,139)	(4,953)	(186)	(4,128)	(3,908)	(220)
Profit before income taxes	11,703	10,977	727	7,918	7,628	290	8,677	8,458	218
Earnings per share (basic/diluted)	€ 1.61	1.52	0.09	0.87	0.82	0.04	0.88	0.85	0.03
Adjusted earnings per share (basic/diluted)	€ 1.83	1.72	0.10	1.22	1.17	0.04	1.20	1.17	0.03

^a The prior-year comparatives were adjusted retrospectively to take account of changes to the principal/agent policy regarding the recognition of gross and net revenues as of the third quarter of 2022. For further information, please refer to the section “Development of business in the Group” and “Changes in accounting policies and changes in the reporting structure” in the consolidated financial statements.

For further information on the agreement with DigitalBridge and Brookfield on GD Towers, please refer to the section “Group organization.”

Revenue and earnings

Revenue corresponds to the value of our operating activities. Absolute revenue depends on how well we are able to sell our products and services on the market. The development of our revenue is an essential indicator for measuring the Company’s success. New products and services as well as additional sales activities are only successful if they increase revenue. **Service revenue** is the revenue that is generated by services (i.e., revenue from fixed-network and mobile voice calls – incoming and outgoing calls – as well as data services) plus roaming revenue, monthly basic charges and visitor revenue, as well as revenue generated from the ICT business. Service revenue is an important indicator for the successful implementation of the growth strategy of the Group and essentially comprises high-value – i.e., predictable and/or recurring – revenues from Deutsche Telekom’s core activities.

The reconciliation of revenue disclosed in the consolidated financial statements to the “service revenue” financial performance indicator can be found in the section “Development of business in the Group.”

We measure our operating earnings performance on the basis of **adjusted EBITDA AL**, i.e., EBITDA adjusted for depreciation of right-of-use assets, for interest expenses on recognized lease liabilities, and for special factors. And EBITDA is calculated as **EBIT** (profit/loss from operations) before depreciation, amortization and impairment losses on intangible assets, property, plant and equipment, and right-of-use assets. Both metrics indicate the short-term operational performance and the success of individual business areas. Special factors have an impact on the presentation of operations, making it more difficult to compare performance indicators with corresponding figures for prior periods. For this reason, we adjust our performance indicators to provide transparency. Without this adjustment, statements about the future development of earnings are only possible to a limited extent. The further inclusion of unadjusted EBIT/EBITDA AL as performance indicators means special factors are also taken into account. This promotes a holistic view of our expenses. In addition to these absolute indicators, we also use the EBIT and EBITDA AL margins to show how these indicators develop in relation to revenue. This makes it possible to compare the earnings performance of profit-oriented units of different sizes.

For the calculation of EBITDA AL, EBIT, and net profit/loss adjusted for special factors, please refer to the section [“Development of business in the Group.”](#)

Adjusted earnings per share is calculated as adjusted net profit divided by the time-weighted number of all ordinary shares outstanding, which is determined by deducting the weighted average number of treasury shares held by Deutsche Telekom AG.

Profitability

We have incorporated sustainable growth in enterprise value into our medium-term aims and implemented it as a separate key performance indicator (KPI) for the entire Group. Return on capital employed (**ROCE**) is a key performance indicator at Group level. ROCE is the ratio of operating result after depreciation, amortization and impairment losses plus imputed taxes (net operating profit after taxes, NOPAT) to the average value of the assets tied up in the course of the year (net operating assets, NOA).

Our goal is to achieve or exceed the return targets imposed on us by providers of debt capital and equity on the basis of capital market requirements. We measure return targets using the weighted average cost of capital (WACC).

NOPAT is an earnings indicator derived from the consolidated income statement, taking an imputed tax expense into consideration. It does not include cost of capital.

NOA includes all assets that make a direct contribution to revenue generation. These include all elements on the asset side of the consolidated statement of financial position that are essential to the rendering of services. To this is added operating working capital, calculated from trade receivables, inventories, and trade and other payables. The figure for “other provisions” is deducted as no return target exists for this.

Financial flexibility

Free cash flow AL (before dividend payments and spectrum investment) is calculated as net cash from operating activities less net cash outflows for investments in intangible assets (excluding goodwill) and property, plant and equipment, as well as the principal portion of repayment of lease liabilities – excluding finance leases at T-Mobile US. Free cash flow AL is a key yardstick for providers of debt capital and equity. It measures the potential for further developing our Company, for generating organic growth, and for the ability to pay dividends and repay debt.

Cash capex (before spectrum investment) relates to cash outflows for investments in intangible assets (excluding goodwill) and property, plant and equipment, which are relevant for cash outflows as a component of free cash flow.

A **rating** is an assessment or classification of the creditworthiness of debt securities and their issuer according to uniform criteria. The assessment of creditworthiness by ratings agencies affects access to the capital markets and to the international finance markets, and refinancing costs. As part of our finance policy, we have defined a target range for our ratings. We believe that with a rating between A- and BBB (Standard & Poor’s, Fitch) or between A3 and Baa2 (Moody’s) we essentially have the necessary entry to the capital markets to generate the required financing.

Non-financial performance indicators

	2022	2021	2020	2019	2018	
Customer satisfaction (TRI*M index) ^a	76.0	73.4	72.2	67.3	67.7	
Employee satisfaction (engagement score) ^b	78	77	4.0	4.0	4.1	
Energy consumption ^{c, d}	GWh	13,253	13,323	12,843	9,324	9,224
CO ₂ emissions (Scope 1 and 2) ^{d, e}	kt CO ₂ e	233	247	2,512	1,797	2,354
Fixed-network and mobile customers						
Mobile customers ^f	millions	245.4	248.2	241.5	184.0	178.4
Fixed-network lines	millions	25.3	26.1	27.4	27.5	27.9
Broadband customers ^g	millions	21.4	21.6	21.7	21.0	20.2
Systems Solutions						
Order entry ^{h, i}	millions of €	3,952	3,876	4,564	4,740	6,776

^a Excluding T-Mobile US.

^b In 2021, we changed from a scale of 1 to 5 for the engagement score (previously the "commitment index") to a scale of 0 to 100.

^c Energy consumption, mainly: electricity, fuel, other fossil fuels, district heating for buildings.

^d Information for the previous years (2018 to 2020) was taken from the non-financial statements for the years in question, which were reviewed in the form of a limited assurance engagement. At the time, this information was not part of the statutory audit of Deutsche Telekom's combined management report and consolidated financial statements.

^e Calculated according to the market-based method of the Greenhouse Gas Protocol.

^f Including T-Mobile US wholesale customers.



^g Excluding wholesale.

^h Order entry for the 2019 financial year was adjusted retrospectively in connection with the realignment of the B2B telecommunications business.



ⁱ Order entry for the 2021 financial year was adjusted retrospectively in connection with the reassignment of the security business.

We believe that satisfied customers act as multipliers for our Company's success. As a responsible, service-oriented company, the needs and opinions of our customers are of great importance to us, and we want them to stay with our Company in the long term. For this reason we measure **customer satisfaction** in our companies using the globally recognized TRI*M method. The results of systematic surveys are expressed by an indicator known as the **TRI*M index**. To underscore the significance of customer retention/satisfaction for our operating business, the performance of Board of Management members and eligible managers is now also being tracked and incentivized by means of the long-term variable remuneration (Long-Term Incentive Plan). This KPI, as one of four target parameters, has been relevant for Variable II since 2010, as well as for the Long-Term Incentive Plan which was launched in 2015, and in which the Board of Management has participated since 2021. We take the TRI*M indexes calculated for the operating entities (excluding T-Mobile US) as an approximation of the respective entities' percentage of total revenue to create an aggregate TRI*M value. This allows Board members and eligible managers to benefit from the development of customer retention/satisfaction.

For further information on customer satisfaction, please refer to the section "[Group strategy](#)."

Our employees want to contribute to the further development of the Company and identify with it. We want to pursue open dialog and productive exchange with our employees. New working models and state-of-the-art communication options, as well as regular employee surveys, help us to accomplish this. The main feedback tools which the Group uses to assess **employee satisfaction** are the employee survey, carried out every two years, and the half-yearly pulse survey (excluding T-Mobile US). In our Company, we measure the employee satisfaction performance indicator using the **engagement score** – derived from the results of the last survey.   In view of the major significance of employee satisfaction for the success of the Company, the performance of Board of Management members and eligible managers is now also being tracked and incentivized by means of the long-term variable remuneration (Long-Term Incentive Plan). Employee feedback, as one of four target parameters, has been relevant for Variable II since 2010, as well as for the Long-Term Incentive Plan which was launched in 2015, and in which the Board of Management has participated since 2021. This allows Board of Management members and eligible managers to benefit from the development of employee satisfaction.

For further information about employee satisfaction, please refer to the section "[Employees](#)."

  Climate change and the destruction of the environment are existential threats to the world. Companies must therefore significantly increase their energy and resource efficiency and restrict their absolute energy consumption. This issue is ever more relevant for providers of information and communications technology (ICT). There is a general expectation on the ICT sector to continue building out the telecommunications network while, at the very least, keeping basic consumption stable in the medium term or even reducing it going forward. Deutsche Telekom records environmental, social, and governance (ESG) data and performance indicators, which are used first and foremost to calculate our Group-wide ESG KPIs, on the basis of which we measure and manage our CR performance. Given the major significance of two ESG targets, the performance of Board of Management members has also been tracked and incentivized by means of the annual variable remuneration since 2021. Since 2022, this has also applied for our managers (excluding T-Mobile US). The non-financial performance indicator **energy consumption** is a record of the energy consumed in connection with the operation of our actual business model. We constantly monitor progress regarding our medium-term goal to reduce energy consumption (by 2024 compared with 2020, excluding T-Mobile US), and can make adjustments where necessary. To this end, we invest in measures and programs to conserve energy from all sources. At the same time, this goal plays into how we optimize and innovate for our future infrastructure, and calls for the use of innovative technology components. In living up to our responsibility to conserve resources and protect the climate, we also run various initiatives that aim to reduce the CO₂ emissions generated as part of our business activities. These initiatives include the sustained use of 100 % green electricity since 2021, optimizing power consumption in our buildings, and gradually transitioning our Group fleet vehicles from fossil fuels to zero- or low-emission power sources. In 2022, the decision was taken to gradually transition all company cars in Germany to these power sources starting in 2023. We measure our progress in this regard on the basis of the **CO₂ emissions** (Scope 1 and 2) non-financial performance indicator. In the United States, we are forging ahead with the highly intensive build-out of our 5G network, in particular in rural areas. This initially drives up power consumption. T-Mobile US, like the Group as a whole, has covered 100 % of its electricity requirements from renewable energy sources since 2021. There are strong fluctuations in T-Mobile US' carbon footprint owing to unforeseeable natural disasters and the associated temporary use of equipment such as diesel generators to restore and back up damaged network infrastructure. Consideration must be given to the special national situation in this key market, which is why the decision was taken, in respect of short-term variable remuneration in 2023, not to include T-Mobile US in these two non-financial performance indicators. This step ensures that the right incentives are set for the Board of Management toward the sustainable development of the business, while at the same time safeguarding the stability of network operations. This applies equally to our executives and managers. The annual ambition for the performance indicators "energy consumption" and "CO₂ emissions" will continue to be set, managed, and reported for the entire Group as before, including a target value for T-Mobile US.

For further information on these and other ESG KPIs, please refer to the section "[Combined non-financial statement.](#)"

As one of the leading providers of telecommunications and information technology worldwide, the development of our Group – and thus also our financial performance indicators – is closely linked to the development of **customer figures**. Acquiring and retaining customers is thus essential to the success of our Company. We have different ways of measuring the development of our customer figures according to the business activity in our operating segments: Depending on the activities of each segment, we measure the number of mobile customers and/or the number of broadband customers and fixed-network lines.

In our Systems Solutions operating segment, we use **order entry** as a non-financial performance indicator. We define and calculate order entry as the total of all amounts resulting from customer orders received in the financial year. Order entry in the form of long-term contracts is of great significance to the Group in order to estimate revenue potential. In other words, order entry is an indicator that provides a high degree of planning reliability.

Performance indicators at Deutsche Telekom AG

Net income is the financial performance indicator of greatest relevance for Deutsche Telekom AG and is used to pay out the dividend to shareholders.

Development of the economic environment and its impact on our business activities and performance indicators

War in Ukraine. Our business activities and key performance indicators have not so far been directly affected by the war in Ukraine. Deutsche Telekom does not own and operate mobile or voice networks in Russia or Ukraine. Neither does a stop on gas deliveries from Russia directly impact on our network operations. Deutsche Telekom is discontinuing its developer activities in Russia. Thanks to our active business continuity management including relocation, the impact on IT operations in particular remained minimal. Indirect effects on Deutsche Telekom arise primarily from increased energy prices in the Europe operating segment. The Group's main energy costs are secured by long-term hedging transactions, especially in the United States and Germany operating segments. We have also secured the main financing requirements there with long-term fixed interest rates. We cannot assess with certainty the medium- and long-term effects on global economic development. But the overall economic outlook has deteriorated significantly, in part as a result of the extensive sanctions imposed on Russia, the limitations on trade in goods, the increased energy prices, and the general energy supply shortage.

Coronavirus pandemic. The pandemic continues to have implications for the global economy in the reporting year. Although it has only had a limited negative impact on the telecommunications sector so far, if the pandemic were to re-escalate, it could lead to further supply-side shortages. Based on experience so far, we expect the coronavirus pandemic to only impact our business activities and performance indicators to a limited extent going forward.

For further information on economic situation overall, please refer to the section [“The economic environment.”](#) For more information on global economic developments and the associated business risks, please refer to the section [“Risk and opportunity management.”](#)

The economic environment

Macroeconomic development

Russia's war against Ukraine slowed growth in all regions, drove up inflation, and intensified shortages in individual markets right from the start of 2022. Extensive sanctions were imposed on Russia in response to its aggression. Dwindling gas deliveries from Russia pushed up energy prices. High inflation has prompted the U.S. Federal Reserve, the European Central Bank, and other central banks to take determined action to tighten monetary policy. Consumer confidence fell significantly over the course of the reporting year. The manufacturing industry suffered supply chain disruptions and rising wholesale costs in 2022. Repeated lockdowns in China until December 2022 as a consequence of the nation's strict Covid strategy continued to impact on economic activity.

The International Monetary Fund (IMF) projects a 3.4 % increase in world economic output for 2022, 1 percentage point less than forecast in the prior year. Economic growth also slowed substantially in our core markets in 2022. In Germany, although gross domestic product (GDP) increased by 1.8 % year-on-year, it was down 0.2 % in the fourth quarter of 2022 against the previous quarter. A technical recession is expected for the latter part of 2022/early part of 2023. The harmonized index of consumer prices increased by 8.7 % in 2022, with energy and food prices recording particularly notable increases. The European Central Bank countered this development by raising its benchmark interest rates four times in 2022.

The Bitkom-ifo-Digitalindex, calculated on the basis of the business situation and expectations, declined over the course of the reporting year but recovered towards the year-end. The current business situation of IT and telecommunications companies was clearly positive in January 2023 at 36.4 points, demonstrating the high resilience of the digital economy in the current crisis. In the digital sector, too, the business outlook brightened in January 2023 for the first time since summer 2022.

The U.S. economy also cooled off noticeably over the course of 2022. Growth sank from 5.9 % in 2021 to 2.0 % in 2022. The shrinking disposable income of private households pushed down consumer demand. Higher interest rates also had a considerable impact on spending, especially on real estate investments. The U.S. Federal Reserve raised its federal funds rate in seven steps in 2022. Inflation calculated on the basis of the consumer price index peaked in June 2022 at 9.1 %, falling back to 6.5 % in December 2022.

The majority of the economies of our Europe operating segment recorded higher growth in 2022 than the EU area as a whole, which recorded growth of 3.3 %. GDP growth in Greece, Poland, and Hungary stood between 4 % and 6 % in the reporting year. However, due to high inflation rates and some more restrictive financing conditions, this growth slowed markedly in the second half of 2022.

The following table shows the GDP growth rate trends and the change in harmonized consumer prices in our most important markets.

	GDP for 2020 compared with 2019	GDP for 2021 compared with 2020	GDP estimate for 2022 compared with 2021	Consumer prices for 2020 compared with 2019	Consumer prices for 2021 compared with 2020	Consumer prices estimate for 2022 compared with 2021
Germany	(3.7)	2.6	1.8	0.4	3.2	8.7
United States	(2.8)	5.9	2.0	0.8	5.3	8.7
Greece	(9.0)	8.4	6.0	(1.3)	0.6	9.3
Romania	(3.7)	5.1	5.8	2.3	4.1	12.0
Hungary	(4.5)	7.1	5.5	3.4	5.2	15.3
Poland	(2.0)	6.8	4.0	3.7	5.2	13.2
Czech Republic	(5.5)	3.5	2.5	3.3	3.3	14.8
Croatia	(8.6)	13.1	6.0	0.0	2.7	10.7
Netherlands	(3.9)	4.9	4.6	1.1	2.8	11.6
Slovakia	(3.4)	3.0	1.9	2.0	2.8	12.1
Austria	(6.5)	4.6	4.6	1.4	2.8	8.6

Sources: Eurostat, European Commission, IMF, national authorities. Last revised: January 31, 2023.

Telecommunications market

Demand for high-speed broadband – over the fixed and mobile networks – remains high. According to estimates by Analysys Mason, data traffic over the fixed network grew by 21 % worldwide in 2022 and mobile data traffic by 34 %. The coronavirus pandemic as well as the war in Ukraine and its consequences have brought into sharp relief that resilient, high-performance broadband infrastructure is of central importance to the economy and society.

Numerous countries have announced ambitious build-out targets for their digital infrastructure. The European Commission published new connectivity targets under which all households in the European Union (EU) should have a gigabit-capable line and all populated areas should be covered by 5G by 2030. At least 20 % of the funds flowing to member states from the Recovery and Resilience Facility are earmarked for digital transition projects. In November 2022, the EU institutions agreed on the “declaration on European digital rights and principles for the digital decade,” which provides among other things for all players benefiting from the digital transition to make an appropriate contribution to the costs of the network infrastructure. Further numerous initiatives at national level were launched to support the broadband build-out and the digital transformation. In Germany, the Federal Government’s Gigabit and Digital Strategy was adopted in 2022. The Gigabit Strategy aims among other things to improve framework conditions in order to accelerate and facilitate the network build-out.

The telecommunications industry continues to be characterized by intense competition. Consumers benefit from a greater range of products to choose from. In the fixed network, established telecommunications companies are competing intensively with cable network operators, city network operators, and resellers, who predominantly make use of regulated wholesale products. Financial investors are increasingly providing money for the build-out of regional and supra-regional fiber-optic networks. In addition, internet companies with over-the-top (OTT) communication services are also further intensifying the competitive pressure. Moreover, three or four mobile network operators operate in each of our markets using their own network infrastructure. On top of this, we are seeing mobile virtual network operators (MVNOs) becoming established in many markets using the network infrastructure of traditional mobile network operators. Against this backdrop, we no longer see a justification for the continued intense regulation of the EU’s telecommunications markets. Many analysts also feel there is a need for regulatory realignment in the telecommunications sector.

Germany

In January 2023, the industry association Bitkom estimated that total revenue in the telecommunications industry in Germany had increased by 1.3 % year-on-year to EUR 68.9 billion in the reporting year. This was largely due to the abatement of the coronavirus pandemic, such that the telecommunications industry recorded growth despite the war in Ukraine. The increase in revenue was mainly attributable to growth in telecommunications infrastructure (7.3 %) and telecommunications terminal equipment (1.8 %), but also to a lesser extent to growth in telecommunications services (0.3 %).

According to market research company Analysys Mason, the number of broadband lines in Germany increased by 1.1 % year-on-year by the end of the first half of 2022 to 38.0 million lines. High-bandwidth lines are increasingly marketed in cable and VDSL/vectoring networks. The drive to build out modern fiber-optic networks continues: in addition to established telecommunications companies, smaller and regional companies are increasingly active. The growing availability of high bandwidths in Germany and the large choice of HD content and video-on-demand services are stimulating sustained customer growth in IPTV business. Providers are recording growth in broadband revenue driven by rising customer numbers in addition to higher revenues per customer for broadband products and triple-play bundles comprising telephony, a broadband line, and TV service. Furthermore, the trend towards using convergent product bundles comprising fixed-network and mobile offerings (FMC) continued, although growth was much weaker than in previous years.

According to the industry association VATM, service revenue in the German mobile communications market increased by 3.4 % compared with 2021, driven mainly by the uninterrupted upswing in data usage, which grew by 47.4 %. As well as the additional demand for higher-value rate plans and devices, revenues from international roaming traffic also increased owing to the rising levels of international travel once again. Regulatory effects as well as sustained high price pressure and intense competition offset this increase in revenue. Mobile data usage continues to increase strongly on the back of growing use of products such as mobile video apps. The availability of 5G mobile technology also expanded rapidly in 2022. The percentage of voice and data rate plans is rising steadily. Traditional voice and text messaging services are increasingly being replaced by free IP messaging services like WhatsApp and social networks like Facebook. Connected products such as smartphones and tablets, as well as other connected wearables such as watches and fitness trackers, are growing ever more popular, pushing up demand for high-speed mobile broadband, large data volumes, and extra SIM cards in the rate plan portfolios.

Digitalization is continuing apace, and as a result there is also growing demand by the industry for more connectivity to allow machines and production sites to be networked and to tap efficiencies in value chains. Extensive IT and cloud solutions, as well as intelligent approaches to M2M communication (machine-to-machine), are needed in order to meet these demands.

United States

In the United States, consumers continued to show strong demand for telecommunications services. In the third quarter 2022, residential broadband market growth was stronger than in the third quarters preceding the coronavirus pandemic, adding approximately 625 thousand subscribers compared to between 515 and 540 thousand before the pandemic. Wireless broadband services, too, rose, with the largest three wireless operators and Comcast and Charter adding 2.3 million postpaid phone subscribers in the third quarter 2022, continuing the upward trends of recent quarters. Wireless demand was driven, among other things, by strong business demand, desires for more second devices, stronger demand by younger and older consumers and an ongoing shift from prepaid to postpaid.

To meet consumer demand, U.S. operators have continued to invest in infrastructure and network upgrades. T-Mobile US has expanded its 5G wireless network to cover 325 million people across the United States. Verizon now provides 5G service in over 2,700 markets and AT&T's 5G network reaches over 285 million people nationwide. Apart from meeting consumer demand, carriers see 5G networks as enabling enterprise opportunities given the lower latency and network slicing capability.

Wireless carriers in 2022 also invested significantly in fixed wireless broadband services in the United States. T-Mobile US and Verizon, in particular, saw significant growth in consumer uptake in 2022, after having launched their 5G fixed wireless services in 2021. T-Mobile US said it had 2.6 million High Speed Internet customers at year end 2022, whereas Verizon says it passed 1 million fixed wireless subscribers in the third quarter of 2022 and reported 379,000 fixed wireless net additions for the fourth quarter of 2022. As of January 2023, T-Mobile US's 5G fixed wireless home Internet service was available to more than 50 million homes. In November 2022, Verizon's fixed wireless service was available to 40 million homes.

Competition from fixed wireless broadband as well as general demand for broadband services is prompting cable providers to invest in their networks. Cable companies continue to perform broadband capacity upgrades, deploy small cell antennas and expand in rural markets to capture new broadband customers. In addition, cable operators have been promoting wireless-broadband bundles as fixed-mobile convergence is gaining traction in the U.S. consumer marketplace due to demand.

Operators are also showing strong interest in fiber buildouts. Fiber is seen by many as an effective long-term solution to satisfy broadband demands. Fiber penetration in the U.S. is currently put around 36 % and estimated to rise to 55 % by 2025. Deployment could be slowed, however by cost inflation, supply chain factors and a rise in interest rates. On the other hand, fiber deployment is expected to benefit from U.S. federal government subsidies. The Infrastructure Investment and Jobs Act passed by Congress in 2021 allocates USD 65 billion to broadband buildout and adoption and foresees around USD 42 billion for infrastructure buildout, with a focus on fiber technology.

In 2022, the U.S. Federal Communications Commission allocated additional frequencies for commercial wireless use to further support the buildout of 5G networks. This included 100 MHz of spectrum in the 3,450 to 3,550 MHz band as well as 117.5 MHz of spectrum in the 2.5 GHz band. No further auctions are planned at this stage.

Europe

The telecommunications markets of our segment were heavily affected by global events in the reporting year: The war in Ukraine had a major negative impact on economic development. The associated extensive sanctions against Russia had a knock-on effect on energy and producer prices. This resulted in sharp rises in inflation rates in these countries, leading to customers making economies in their selection of telecommunications products. Nevertheless, demand for broadband and TV services remained high. This is also reflected in Analysys Mason's figures for the fixed-network business (excluding systems solutions) for the first half of 2022: The business is growing, driven in particular by the increase in broadband business. This offset the decline in revenues from voice telephony. Mobile business also performed better than in the prior year.

The market players in our European footprint focused their acquisition activities in the reporting year on becoming providers of convergent product bundles comprising fixed-network and mobile services (FMC). In Greece, for example, a new convergent competitor emerged from the United Group's takeover of Nova and Wind. In Poland, the Iliad Group strengthened its convergent position by taking over Play and UPC Poland. In Hungary, the ICT group 4iG made a number of acquisitions, including that of Digi, Invitel, Antenna Hungary, and Vodafone/UPC Hungary, so as to establish itself as the second largest convergent company in Hungary. In Croatia, Telemach acquired Tele2 and Optima, making it the third strongest company with convergent services. In terms of the acquisition of spectrum licenses, there was only limited activity on the markets in the reporting year. However, the activities of the cell tower businesses picked up pace.

Convergent product bundles are now established in our markets and consistently post high growth rates. According to Analysys Mason, the number of FMC customers and revenues continued to grow year-on-year in the first half of 2022. The further development of existing retail offerings will allow specific target groups to be addressed, as well as innovative bundle bonuses to be obtained, such as the Telefónica Relaunch with the inclusion of non-traditional services in Mi Movistar or MagentaOne in our national companies. These integrated bonus packages are enjoying sustained strong growth in our national companies and frequently address the majority of consumers, which is having a positive impact on customer satisfaction, churn rates, and revenue growth.

In the markets of our Europe operating segment, subscription-based streaming services are now also on the rise. In addition to Netflix and Disney+, Warner Bros. Discovery has brought another retail product to market with HBOmax. In addition, SkyShowtime – a joint venture of Paramount Global and Comcast – has also been active in our markets since the end of 2022 or the start of 2023. The substitution potential for traditional pay TV is (still) manageable, although rising, since localization and local content are both on the increase. This trend is being delayed in part by the development of the macroeconomic situation. The unusually high inflation rates have led customers to reallocate or prioritize their disposable income. As a result, consumers are showing restraint in subscribing to additional premium entertainment services. Likewise, the parallel use of multiple on-demand services (stacking) is less widespread in these markets than, for example, in the United States or in Western Europe. Despite this, the appeal of this business model is evidenced by the year-on-year growth: according to Analysys Mason, revenues with streaming services in Europe and the customer base both posted strong growth as of the end of the first half of 2022.

In the reporting year, B2B operations kept pace with changing circumstances as the coronavirus pandemic abated. After an economically strong first half of 2022, Europe has now entered a much more challenging phase. The war in Ukraine and its consequences as well as increased inflationary pressures have had a negative impact on all industries. Owing to their geographic proximity to the war and their heavy dependence on gas imports from Russia, the countries of our segment are among the most heavily affected economies. Given that Europe is on the verge of tackling the challenge of transforming its economic model to a circular economy on the basis of a digital and green transition, the telecommunications sector will become a strategic and important partner to enable Europe to emerge in a stronger position. Since 2021, the European markets have adopted new networks, digital services and applications such as 5G, increasingly competition-centric broadband markets, and cybersecurity as the basis for the digital and green transformation. More reliable 5G connectivity, cloud computing, edge computing, and artificial intelligence have resulted in growing interest from companies in secure multi-access edge computing and private networks in order to strengthen their competitiveness and strategic autonomy.

Systems Solutions

In the IT industry in our core market of Western Europe, the volume that can be addressed by our Systems Solutions operating segment and the T-Systems brand increased by 5.6 % in the reporting year to EUR 172 billion. Companies continue to invest in digital solutions.

In Germany, in terms of IT services, demand has grown further for public cloud services and cybersecurity services, as has the importance of digitalization (including Industry 4.0). The security market in Western Europe addressed by T-Systems grew by 10.7 % in 2022. The health sector also developed positively, posting double-digit growth rates in areas including telehealth and the healthcare cloud in Germany. By contrast, growth in demand slowed in the market segments for traditional infrastructure, project business, and SAP services.

Competitive and price pressure persisted in all submarkets of our Systems Solutions operating segment. This was due on the one hand to competitors from traditional IT services business, such as IBM, Atos, and Capgemini, and on the other to cloud providers such as Amazon Web Services, Microsoft Azure, and Google Cloud. Prices were eroded further by providers of services that are delivered primarily offshore (e.g., Tata Consultancy Services, Infosys, and Wipro). In addition, the effects of the war in Ukraine had an impact on business, for example due to increased raw material prices and high levels of inflation.

Group Development

The sale of T-Mobile Netherlands was consummated on March 31, 2022. The environment of our Group Development operating segment is therefore dominated by the markets served by our companies Deutsche Funkturm (DFMG) and Magenta Telekom Infra (MTI) in Austria.

DFMG is the biggest provider of passive wireless infrastructure for mobile communications and broadcasting in Germany. The market also saw increased demand for cell sites in the 2022 financial year, due on the one hand to the fact that network operators plan to close gaps in coverage, and on the other to the fact that demand for mobile data services is growing, which calls for a further increase in the density of mobile networks.

MTI is the second-largest provider of passive wireless infrastructure for mobile communications and broadcasting in Austria. The densification of the Austrian market continued throughout 2022, driven by rising demand for mobile data services and the fulfillment of coverage obligations by the network providers.

Major regulatory decisions

Our business activities are largely subject to national, European, and U.S. regulation, which is associated with extensive powers to intervene in our product design and pricing, particularly in Europe. We were still subject to extensive regulation in our mobile and fixed-network businesses in 2022.

Regulation

European roaming regulation. July 1, 2022 marked the entry into force of the new Roaming Regulation for the European Union, which expands and extends the existing Roaming Regulation until 2032. The Roam like at Home principle introduced in 2017, initially for a period of five years, which allows consumers to make calls at domestic terms and conditions and use data volumes within the European Union, will now apply for a further ten years. New rules were also added on transparency, and the new regulation will ensure that the quality of roaming services is not lower than mobile services at home. New, lower price caps through 2031 were set for inter-operator tariffs for corresponding wholesale services, to be re-examined in 2024/2025. Steps to tighten regulation on voice calling and text messaging (SMS) between EU member states that had been discussed earlier were not included in the final regulation.

Approval of rates for copper-based wholesale services in Germany for 10 years. The Bundesnetzagentur published its final ruling on June 28, 2022, setting out the rates for unbundled local loop lines (ULLs) for the period from July 2022 to June 2032, for the first time for a period of 10 years. Starting July 1, 2022, a rate of EUR 10.65/month applies for the (longer) copper line section between the end customer and the main distribution frame in the Telekom building and of EUR 6.92/month for the (shorter) copper line section between the end customer and the cable distribution box on the street. These rates are to increase by 4 % as of July 1, 2027 to EUR 11.08/month and EUR 7.20/month, respectively.

Bundesnetzagentur's decision on access regulation including FTTH/H network access. On July 21, 2022, the Bundesnetzagentur published its decision on the future regulation of access to Deutsche Telekom's copper and fiber-optic network. The decision was preceded by consultations held at national and international level. Existing regulation of FTTH/H networks will be eased, by putting an end to "ex ante" and access regulation in the future. Non-discriminatory access will instead be secured under the Equivalence of Input (EoI) principle enshrined in the new Telecommunications Act (Telekommunikationsgesetz – TKG). Under the new system, wholesalers would have access to the same material and human resources as Deutsche Telekom's sales teams. The Bundesnetzagentur will further abolish the traditional "ex ante" regulation of layer 2 (VDSL) products and tie charges to a notification obligation. The commitment agreements agreed through the end of 2031 have been examined in more detail and have passed the replicability test. The decision also includes the requirement for Deutsche Telekom to grant access to ducts and poles. The specific access conditions will be determined in subsequent proceedings.

Adoption of the Federal Government's Digital Strategy. On August 31, 2022, the Federal Cabinet of Germany adopted the Federal Government's Digital Strategy 2025. The strategy brings together the key policy areas for the cross-cutting topic of digitalization and prioritizes the implementation of projects that are expected to unlock the greatest potential when it comes to advancing digitalization. One of its goals is to digitalize all public and healthcare services by 2025. A modern legal framework is also planned, which will support the development of the data economy and improve the use of data through connected virtual data rooms. The Gigabit Strategy adopted on July 13, 2022 plays a central role, promising greater speeds and improved framework conditions for building out the networks. The aim is to achieve nationwide coverage with fiber to the home (FTTH) and the latest-generation mobile communications standard by 2030. Specific action includes the introduction of expedited approval processes, the more widespread use of alternative cable-laying technologies, and the creation of a central information database (Gigabit-Grundbuch) that will improve transparency on the availability of infrastructure that can be shared. The federal states and municipalities play a key role in the implementation of these measures. A new Advisory Board for the Digital Strategy of Germany has been set up to provide monitoring and support. With the expertise of the Advisory Board and with the help of a database, the 135 targets of the Digital Strategy are to be continuously assessed in terms of progress and the need for change. The Federal Government has also announced an international digitalization strategy, which is expected in the next year.

Ongoing court case on the approval under merger control law for the joint venture Glasfaser NordWest. Telekom Deutschland and EWE founded the joint venture Glasfaser NordWest in 2020. The aim of the joint venture is to provide up to 1.5 million households and business locations with fast internet. On September 22, 2021, Düsseldorf Higher Regional Court overturned the approval granted by the Federal Cartel Office (Bundeskartellamt) under merger control law. The Bundeskartellamt, EWE, and Telekom Deutschland have each lodged a complaint against the decision of the Düsseldorf Higher Regional Court to not allow an appeal. The Federal Court of Justice has not yet ruled on these complaints. If the Düsseldorf Higher Regional Court's decision becomes final, the case will be referred back to the Bundeskartellamt for a new decision on approval and any further conditions. The joint venture can continue building out FTTH until the Bundeskartellamt decides otherwise.

Spectrum

In the United States, the assignment phase of Auction 110 ended on January 4, 2022. In this auction, the U.S. Federal Communications Commission (FCC) allocated a total of 100 MHz in the 3,450 to 3,550 MHz band. T-Mobile US paid USD 2.9 billion (EUR 2.6 billion) to secure itself a total of 199 licenses. The bidding phase of FCC Auction 108 in the United States ended on August 29, 2022, whereupon T-Mobile US was awarded a further 7,000 2.5 GHz licenses for which it paid a total of around USD 0.3 billion (EUR 0.3 billion). The U.S. Federal Communications Commission has not yet granted the licenses acquired at the auction. In the first quarter of 2022, OTE successfully participated in the auction for frequencies in the 430 MHz band in Greece, securing spectrum for around EUR 1.2 million. In Slovakia, the 3.x GHz auction was brought to a successful conclusion in May 2022, with Slovak Telekom securing 100 MHz for EUR 16 million. The four established mobile network operators agreed to a reshuffling of the 1,800 MHz band, which means they can each now use 2 x 20 MHz blocks of contiguous spectrum. In connection with the reshuffle, the spectrum licenses were extended for 15 years for a fee of EUR 8.9 million per network operator. In Poland, the extension of the 2,100 MHz licenses has been completed and the new licenses were sent out on October 11, 2022. In November 2022, Romania awarded 5G spectrum in the 700 MHz, 1,500 MHz, 2,600 MHz, and 3,400 to 3,800 MHz bands. Telekom Romania Mobile Communications did not participate in the auction. The usage rights in the 2,100 MHz band were also extended in the Czech Republic in December 2022.

The regulatory authority in Croatia opened the bidding phase of the multi-band auction on January 17, 2023. On December 20, 2022, the Polish regulatory authority UKE published a draft award procedure for the 3,400 to 3,800 MHz band, kicking off the procedure, which had hitherto been held up by an ongoing legislative process, and which is now expected to be completed in the first half of 2023. Awards for the 700/800 MHz and 26,000 MHz bands could follow in 2023. In the Czech Republic, the procedure to extend the 900/1,800 MHz GSM license, which expires in 2024, is expected to begin in the course of 2023. Meanwhile, in Slovakia, a procedure to extend or award spectrum in the 900 MHz and 2,100 MHz bands is expected for 2023. In Austria and Hungary, the millimeter wave spectrum in the 26,000 MHz band is also expected to come up for award in 2023. No further details are available at present.

In Germany, the usage rights for 800 MHz, 1,800 MHz (partial), and 2,600 MHz are due to expire at the end of 2025. The Bundesnetzagentur still sees a considerable need for clarification on a range of issues and in September 2022 launched a consultation on a position paper containing a proposed award concept. A final decision on this has not yet been made.

In the United States, on August 8, 2022, T-Mobile US reached agreements with Channel 51 License and LB License on the acquisition of licenses in the 600 MHz spectrum for an aggregate purchase price of USD 3.5 billion (EUR 3.4 billion). The agreements are subject to approvals by the regulatory authorities and certain other customary closing conditions. The transactions are expected to be completed between mid and late 2023.

The following table provides an overview of the main ongoing and planned spectrum awards and auctions as well as license extensions. It also indicates spectrum to be awarded in the near future in various countries.

Main spectrum awards

	Expected start of award procedure	Expected end of award procedure	Frequency ranges (MHz)	Planned award procedures	Updated information
Croatia	Started	Q2 2023	800/900/1,800/ 2,100/2,600	Auction (SMRA ^a)	Unsold residual spectrum in the 3,400 to 3,800 MHz and 26,000 MHz bands will not be included in the award for nationwide use.
Austria	Q3 2023	Q4 2023	26,000	Details tbd	
Poland	Q1 2023	Q2 2023	3,400 – 3,800	Auction (SMRA ^a), 4 blocks of 80 MHz, cap expected at 80 MHz	Start of procedure with consultation in December 2022. Bidding process expected in H1 2023.
Poland	Q3 2023	Q4 2023	700/800	Auction or tender procedure ^b , details and timeline tbd	Plans for all bands still unclear due to discussions on award models, dependency on the adoption of the Cyber Security Act, and standstill in 700 MHz border coordination talks with Russia.
Poland	Q3 2023	Q4 2023	26,000	Details tbd	Regulatory authority announced plans for award procedures in 2023 without giving details.
Slovakia	Q1 2023	Q2 2023	900/2,100	Extension or award procedures	
Czech Republic	Q2 2023	Q4 2023	900/1,800	Extension procedure	900/1,800 MHz GSM license of T-Mobile Czech Republic expires in 2024. Extension procedure expected in 2023.
Hungary	Q3 2023	Q4 2023	26,000	Details tbd	Regulatory authority announced plans for award procedures in 2023 without giving details.

^a SMRA: simultaneous (electronic) multi-round auction with ascending, parallel bids for all available frequency bands.

^b Tender procedure (beauty contest auction) offering a competitive selection process for assigning scarce frequencies.

Development of business in the Group

Statement of the Board of Management on business development in 2022

Bonn, February 14, 2023

Deutsche Telekom is an anchor of stability in uncertain times: We can look back on a successful financial year in which we continued our growth course in a challenging macroeconomic environment. Independent tests confirm that we have the best network and the best service in many of our markets. We achieved our annual build-out targets and were therefore also able to delight our customers. It is not by accident that Brand Finance ranks us as the most valuable brand in Europe in its brand ranking. And our strategy of sustainable corporate governance is also paying off on the capital market: our share price rose to more than EUR 20 at the start of 2023.

It is and remains important to us to fulfill our social responsibility – especially with offers of help and specific support for those affected by the war in Ukraine. We also keep an eye on our ambitious climate goals. Since 2021, our customers have been surfing on Deutsche Telekom's green network, and our own energy consumption for all Group units has been covered entirely by electricity from renewable energy sources. At the Group's first [Sustainability Day](#) in October 2022, we announced further measures, such as the decision not to order any new company vehicles with combustion engines in Germany, and the exclusive use of sustainable packaging from 2025.

We met our key corporate targets in 2022. We closed significant transactions, completed reorganizations, and took further steps to secure control of T-Mobile US. In the United States, we once again recorded strong growth in customer numbers, especially in postpaid. But the high-speed internet offering was also very well received. In Europe and Germany, our integrated offers continue to enjoy strong demand. This is also reflected in our key financials: We raised our guidance for adjusted EBITDA AL, free cash flow AL (before spectrum), and adjusted earnings per share for the 2022 financial year several times over the course of the year. Net revenue increased by 6.1 % to EUR 114.4 billion, mainly due to exchange rate effects. Service revenue was up 10.6 % to EUR 91.9 billion.

Adjusted EBITDA AL grew by 7.7 % to EUR 40.2 billion. The main reason for this increase is a sound operational development, driven by revenue growth and further enhanced cost efficiency. EBIT increased by 23.8 % to EUR 16.2 billion, despite significant negative special factors that affected it. These primarily comprised integration costs incurred in connection with the business combination of T-Mobile US and Sprint as well as impairment losses recorded in the United States, mainly in connection with the agreed sale of the former Sprint's fiber-optic-based wireline business. By contrast, income from the deconsolidation of GlasfaserPlus and T-Mobile Netherlands had a positive effect. The suspension of depreciation and amortization as a result of the business entities T-Mobile Netherlands and GD Towers being held for sale on account of the sales agreements also increased EBIT.

Loss from financial activities decreased thanks in part to a large number of positive effects from the measurement of derivatives – in particular from the forward transaction to hedge the price of acquiring shares in T-Mobile US in the future, and the stock options to purchase shares in T-Mobile US – as well as income from the measurement of provisions resulting from the sharp rise in interest rates. By contrast, negative trends were recorded for finance costs and the share of profit/loss of associates and joint ventures included in the consolidated financial statements using the equity method, the latter on account of an impairment loss recognized on our stake in GlasfaserPlus. Ultimately, net profit increased significantly to EUR 8.0 billion. Adjusted net profit increased to as much as EUR 9.1 billion. As a consequence, adjusted earnings per share increased to EUR 1.83.

ROCE increased by 0.4 percentage points year-on-year to 4.5 %, driven in particular by the increase in adjusted EBITDA AL.

Net debt increased from EUR 132.1 billion to EUR 142.4 billion. This increase is largely attributable to the modification of the arrangements between T-Mobile US and Crown Castle. The resulting increase in right-of-use assets and property, plant and equipment was reflected in the increase in net debt by EUR 7.4 billion in total. But exchange rate effects and further additions of lease liabilities and right-of-use assets also had an increasing effect. In the United States, the acquisition of spectrum, the share buy-back program, and our increase of the stake in T-Mobile US contributed to the increase.

The trends in the industry, in particular on the European telecommunications markets, remain challenging due to ongoing competitive pressure and strict regulatory requirements. In order to succeed in the future, we continue to invest heavily in the key to our success: our network infrastructure and our technology. In 2022, we made Group-wide investments (before spectrum) of EUR 21.0 billion, EUR 3.0 billion more than in the prior year, with a focus on the parallel build-out of our broadband and mobile infrastructure (optical fiber and 5G). Including the spectrum payments, this figure was EUR 24.1 billion in the reporting year. Our free cash flow AL (before dividend payments and spectrum investment) increased by 30.2 % to EUR 11.5 billion. We are therefore a solid investment-grade company with access to the international capital markets. The rating agency Standard & Poor's even raised our rating outlook in April 2022, and, for the first time, our U.S. subsidiary has also had a full investment-grade rating from all three major rating agencies since August 2022.

As communicated at our [Capital Markets Day](#) in May 2021, we want to underpin our strong starting position going forwards with solid financial growth rates. We pursue a sustainable dividend policy for our shareholders. For the 2022 financial year, we will propose a dividend of EUR 0.70 for each dividend-bearing share. This year, the dividend will once again be paid out without any deduction of capital gains tax, and we expect this to be also the case in the years to come. Following a very strong year in 2021, the stock markets showed a much weaker performance in 2022. By contrast, the T-Share closed 2022 up 14.0 %. On a total return basis, it was up by as much as 18.6 %.

Our goal is clear: We want to become the Leading Digital Telco. To this end, we will align ourselves long-term with the needs of our customers and systematically transform ourselves into a simple, digital, and in every way agile company to hold our own against the competition and continue our growth course. The aim of building and operating the best convergent networks remains at the core of our strategy and is an important driver for our growth areas. Deutsche Telekom will not rest on its laurels, we will remain ready and willing to change. And we will not waver: we remain an anchor of stability.

Notes on the management approach

Presentation of GD Towers. On July 13, 2022, Deutsche Telekom reached an agreement with DigitalBridge and Brookfield on the sale of a 51.0 % stake in GD Towers, comprising its tower assets in Germany and Austria, assigned to the Group Development operating segment. This transaction was consummated on February 1, 2023. As a result, the GD Towers business entity has been recognized in the consolidated financial statements as a discontinued operation since the third quarter of 2022. However, in the combined management report we continue to include the contributions by GD Towers in the results of operations according to the management approach.

For further information on the agreement with DigitalBridge and Brookfield on GD Towers, and the presentation of GD Towers according to the management approach, please refer to the sections "[Group organization](#)" and "[Management of the Group](#)."

Gross vs. net recognition of revenues – change in the principal/agent consideration. In light of the IFRS Interpretations Committee's agenda decision published in May 2022 on transactions involving the commercial resale of software, Deutsche Telekom has implemented changes to its accounting practices with respect to the recognition of gross vs. net revenues, effective the start of the third quarter of 2022. For Deutsche Telekom, the question arises particularly in the case of branded digital products (e.g., streaming services, software licenses, cloud-based software as a service) provided by and purchased from third parties and sold to customers as part of Deutsche Telekom's product portfolio. In considering the change in policy, Deutsche Telekom determines that it only acts as a principal and thus must recognize revenues on a gross basis if the customer does not enter into any contractual relationship with the third-party supplier, Deutsche Telekom bears primary responsibility for product acceptance and customer support, and is in a position to set the price for the customer. In contrast to its previous accounting practice, the application of the new policy results in a decline both in revenues and in goods and services purchased of EUR 1.3 billion in each case for 2022, and of EUR 1.0 billion in each case for 2021. The prior-year comparatives for revenue and order entry were adjusted with retrospective effect.

Reassignment of the security business. Effective July 1, 2022, Deutsche Telekom reassigned its subsidiary Deutsche Telekom Security and the security business in Germany, Austria, Switzerland, Hungary, and Slovakia from the Systems Solutions operating segment to the Germany operating segment in order to maintain a consistent focus on implementing our Group strategy pillar "Lead in business productivity." Prior-year comparatives in both of the segments affected concerning the development of operations, customer development, headcount development, and order entry were adjusted retrospectively.

Comparison of the Group's expectations with actual figures

In the 2021 Annual Report, we outlined expectations for the 2022 financial year for our financial and non-financial key performance indicators anchored in our management system. The following tables summarize the pro forma figures for 2021, the results expected for the reporting year, and the actual results achieved in 2022. The performance indicators that we also forecast in the 2021 Annual Report and their development are presented in the individual sections.

Comparison of the expected financial key performance indicators with actual figures

		Pro forma figures for 2021	Original expectations for 2022 ^a	Expectations revised during 2022 ^a	Results in 2022
Net revenue	billions of €	106.5	stable trend		114.4
Service revenue	billions of €	82.1	slight increase		91.9
EBITDA AL (adjusted for special factors) ^b	billions of €	36.5	around 36.5	more than 37.0	40.2
Profit (loss) from operations (EBIT)	billions of €	12.5	strong increase		16.2
Earnings per share (adjusted for special factors) ^{b, c}	€	1.22	slight increase	more than 1.50	1.83
ROCE ^c	%	4.1	slight increase		4.5
Free cash flow AL (before dividend payments and spectrum investment) ^b	billions of €	8.4	around 10.0	more than 10.0	11.5
Cash capex (before spectrum investment)	billions of €	17.7	19.3		21.0
Rating (Standard & Poor's, Fitch)		BBB, BBB+	from A- to BBB		BBB, BBB+
Rating (Moody's)		Baa1	from A3 to Baa2		Baa1

^a Our 2022 guidance was determined based on a U.S. dollar exchange rate of USD 1.18.

^b Contrary to the forecasts published in the 2021 combined management report (2021 Annual Report), we adjusted the guidance for 2022 for EBITDA AL (adjusted for special factors), free cash flow AL (before dividend payments and spectrum investment), and earnings per share (adjusted for special factors) during the course of the year (Interim Group Reports as of March 31, 2022, June 30, 2022, and September 30, 2022).

^c Pro forma figures were not provided for these performance indicators in the 2021 Annual Report. Instead, we include here the actual figures for 2021.

The comparison shown in the table of the pro forma figures for 2021 and the expectations formulated on this basis for 2022 with the results actually generated for 2022 is not like for like, i.e., these figures are not based on comparable exchange rates. Below we describe the results achieved on a like-for-like basis, i.e., at comparable exchange rates and excluding the results of T-Mobile Netherlands for the first quarter of 2022. Similarly, for the purposes of this comparison, we have not included any positive effects from the suspension of depreciation and amortization for GD Towers due to it being recognized as a discontinued operation.

Once again we look back on a successful financial year. We met or significantly exceeded our expectations. As expected, our revenue trended stably in organic terms, i.e., adjusted for exchange rate effects and changes to the composition of the Group, while service revenue grew substantially on an organic basis by 3.7%. Adjusted EBITDA AL increased in organic terms by 1.7%, despite the strategic withdrawal from the terminal equipment lease business model in the United States. Even under the premises we formulated for our guidance, i.e., excluding the results of T-Mobile Netherlands and the positive effects from suspending depreciation and amortization for GD Towers, we still outperformed our most recently communicated guidance of over EUR 37.0 billion. At EUR 1.83, adjusted earnings per share were significantly higher than our revised guidance of more than EUR 1.50, due to the positive development of operations and a number of positive one-time effects. ROCE increased to 4.5%. At EUR 11.5 billion, free cash flow AL (before dividend payments and spectrum investment) clearly exceeded our latest guidance of over EUR 10.0 billion, even taking positive exchange rate effects into account. Cash capex (before spectrum investment), taking the increases from exchange rate effects into account, was slightly higher than expected.

Comparison of the expected non-financial key performance indicators with actual figures

		Pro forma figures for 2021	Expectations for 2022	Results in 2022
Group				
Customer satisfaction (TRI*M index)		72.6	slight increase	76.0
Employee satisfaction (engagement score) ^a		77	stable trend	78
Energy consumption ^{a, b}	GWh	13,323	stable trend	13,253
CO ₂ emissions (Scope 1 and 2) ^{a, c}	kt CO ₂ e	247	slight decrease	233
Fixed-network and mobile customers				
Germany				
Mobile customers	millions	53.2	increase	54.2
Fixed-network lines	millions	17.5	stable trend	17.4
Retail broadband lines	millions	14.5	slight increase	14.7
United States				
Postpaid customers	millions	87.7	increase	92.2
Prepaid customers	millions	21.1	slight increase	21.4
Europe				
Mobile customers	millions	45.8	slight increase	47.3
Fixed-network lines	millions	7.8	slight decrease	7.9
Broadband customers	millions	6.4	increase	6.7
Systems Solutions				
Order entry	billions of €	4.2	slight increase	4.0

^a Pro forma figures were not provided for these performance indicators in the 2021 Annual Report. Instead, we include here the actual figures for 2021.

^b Energy consumption, mainly: electricity, fuel, other fossil fuels, district heating for buildings.

^c Calculated according to the market-based method of the Greenhouse Gas Protocol.

We are also on track with our non-financial performance indicators. In our domestic market of Germany, we recorded an increase both for mobile communications and for broadband. In the United States operating segment, we once again recorded strong growth in postpaid customers: the number of customers increased by a record 6.4 million, thereby exceeding our already high expectations. Customer numbers in our Europe operating segment trended positively and above our expectations in some areas, in particular the number of fixed-network lines and mobile customers.

Order entry in our Systems Solutions operating segment was below the figure forecast, due to the reassignment of the security business to the Germany operating segment, which had not been accounted for in the original planning. On a like-for-like basis with the prior year, order entry was up slightly, in line with our expectations.

Employee satisfaction remained high in 2022 at 78 points. At the end of the reporting year, customer satisfaction came in at 76.0 points compared with an adjusted baseline figure of 72.6 points at the start of the year. Following changes to the revenue shares contributed by each country and in order to create an equivalent basis for comparing the Group's expectations with actual figures, we recalculated the baseline figure for 2022 on the basis of the new structures these changes entailed. The new baseline thus diverges from the figure of 73.4 reported as of December 31, 2021. The Germany, Europe, and Systems Solutions operating segments contributed to the very positive development with clear improvements in customer loyalty. The Group's energy consumption remained stable while CO₂ emissions declined slightly, both of which were in line with our expectations.

For further information on the trends in our main financial and non-financial performance indicators, please refer to the relevant passages in this section as well as in the section "Development of business in the operating segments."

Results of operations of the Group

The GD Towers business entity has been recognized in the consolidated financial statements as a discontinued operation since the third quarter of 2022. According to the management approach, however, we continue to include the contributions by GD Towers in the Group Development operating segment in the management-relevant financial performance indicators explained here. For the reconciliation to the consolidated income statement, please refer to the relevant table in the section "Management of the Group."

millions of €					
	2022	2021	Change	Change %	2020
Net revenue	114,413	107,811	6,602	6.1	100,139
Service revenue	91,947	83,130	8,817	10.6	78,107
EBITDA AL (adjusted for special factors)	40,208	37,330	2,878	7.7	35,017
EBITDA AL	35,989	33,893	2,096	6.2	33,178
Depreciation, amortization and impairment losses	(27,827)	(27,482)	(345)	(1.3)	(25,829)
Profit (loss) from operations (EBIT)	16,159	13,057	3,102	23.8	12,804
Profit (loss) from financial activities	(4,455)	(5,139)	684	13.3	(4,128)
Profit (loss) before income taxes	11,703	7,918	3,785	47.8	8,677
Net profit (loss)	8,001	4,176	3,825	91.6	4,158
Net profit (loss) (adjusted for special factors)	9,081	5,862	3,219	54.9	5,715
Earnings per share (basic/diluted)	€ 1.61	0.87	0.74	85.1	0.88
Adjusted earnings per share (basic/diluted)	€ 1.83	1.22	0.61	50.0	1.20

In order to increase the informative value of the prior-year comparatives based on changes to the Company's structure or exchange rate effects, we also describe selected figures in **organic terms**, by adjusting the figures for the prior year for exchange rate effects, changes in the composition of the Group, and other effects. The exchange rate effects were primarily attributable to the translation of U.S. dollars to euros. Due to changes in the composition of the Group, the organic figures for the prior year decreased in the Group Development operating segment, in connection with the sale of T-Mobile Netherlands as of March 31, 2022, and in the Europe operating segment, mainly in connection with the sale of the Romanian fixed-network business as of September 30, 2021. By contrast, the organic figures in the United States operating segment increased in connection with the acquisition of Shentel as of July 1, 2021.

Net revenue, service revenue

In the reporting year, we generated net revenue of EUR 114.4 billion, which was 6.1% or EUR 6.6 billion up on the prior-year level. In organic terms, revenue remained on a par with the prior-year level, including positive net exchange rate effects of EUR 8.4 billion, with the changes in the composition of the Group having the net reducing effect of EUR 1.8 billion. Service revenue in the Group increased by EUR 8.8 billion or 10.6% year-on-year to EUR 91.9 billion. In organic terms, service revenue increased by EUR 3.3 billion or 3.7%.

Contribution of the segments to net revenue (according to the management approach)

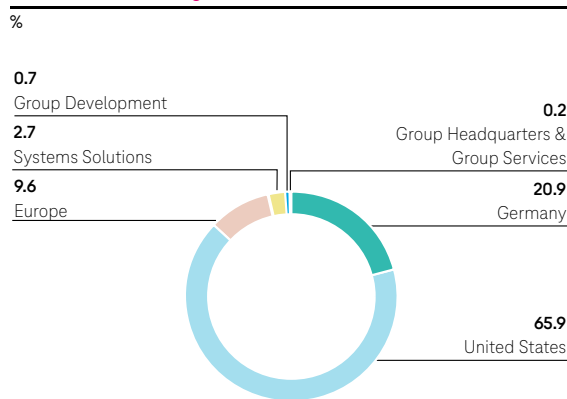
millions of €					
	2022	2021	Change	Change %	2020
Germany	24,505	24,050	455	1.9	23,712
United States	75,436	67,791	7,645	11.3	60,702
Europe	11,158	11,294	(136)	(1.2)	11,251
Systems Solutions	3,811	3,759	52	1.4	3,911
Group Development	1,708	3,165	(1,457)	(46.0)	2,883
Group Headquarters & Group Services	2,407	2,515	(108)	(4.3)	2,556
Intersegment revenue	(4,612)	(4,763)	151	3.2	(4,876)
Net revenue	114,413	107,811	6,602	6.1	100,139

Our United States operating segment in particular contributed to the positive revenue trend with an increase of 11.3 %, mainly due to exchange rate effects. In organic terms, revenue declined by 1.3 % year-on-year due to lower terminal equipment revenue, partially offset by higher service revenue. Revenue in our home market of Germany was up on the prior-year level, increasing by 1.9 %. This was primarily driven by growth in service revenues, in both the fixed-network core business, mainly due to broadband, and in mobile communications. In our Europe operating segment, revenue decreased by 1.2 % year-on-year, mainly due to the sale of the Romanian fixed-network business. In organic terms, however, revenue increased by 3.9 %, primarily attributable to the strong performance of the mobile business, especially the increase in higher-margin mobile service revenues, increases in roaming and visitor revenues, and volume-driven increases in revenues from terminal equipment sales. Fixed-network service revenue also developed better compared with the prior-year period. Revenue in our Systems Solutions operating segment was up 1.4 % year-on-year; in organic terms, it was up 1.0 %. This positive development was mainly driven by growth in the Digital Solutions, Road Charging, and Advisory portfolio units, and it more than offset the expected decline in traditional IT infrastructure business. Revenue in our Group Development operating segment declined significantly compared with the prior-year period, mainly due to the sale of T-Mobile Netherlands. In organic terms, however, revenue increased by 6.5 % thanks to the operational and structural growth of the GD Towers business entity.

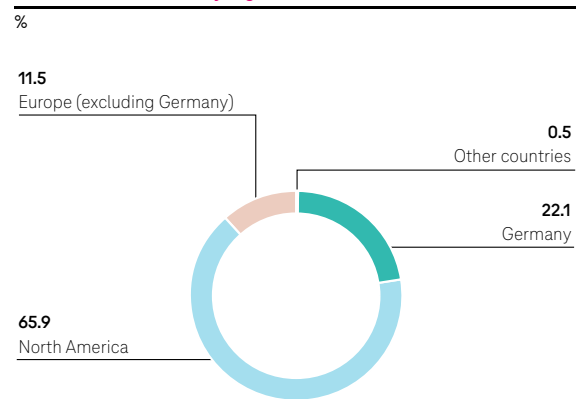
For further information on revenue development in our segments, please refer to the section [“Development of business in the operating segments.”](#)

For information on the extension of the definition of service revenue, please refer to the section [“Management of the Group.”](#)

Contribution of the segments to net revenue^a



Breakdown of revenue by region



^a For further information, please refer to Note 38 [“Segment reporting”](#) in the notes to the consolidated financial statements.

At 65.9 %, our United States operating segment again provided by far the largest contribution to net revenue of the Group, up 3.1 percentage points above the prior-year level. The proportion of net revenue generated internationally also increased from 77.0 % to 77.9 %.

Adjusted EBITDA AL, EBITDA AL

Adjusted EBITDA AL increased year-on-year by EUR 2.9 billion or 7.7 % to EUR 40.2 billion in the reporting year. In organic terms, adjusted EBITDA AL increased by EUR 0.7 billion or 1.7 %, including positive net exchange rate effects of EUR 2.8 billion, and with changes in the composition of the Group having a net reducing effect of EUR 0.6 billion. Adjusted core EBITDA AL, i.e., adjusted EBITDA AL excluding revenue from terminal equipment leases in the United States, thereby presenting operational development undistorted by the strategic withdrawal from the terminal equipment lease business, increased by EUR 4.3 billion or 12.5 % to EUR 38.9 billion.

Contribution of the segments to adjusted Group EBITDA AL (according to the management approach)

millions of €

	2022	Proportion of adjusted Group EBITDA AL %	2021	Proportion of adjusted Group EBITDA AL %	Change	Change %	2020
Germany	9,837	24.5	9,536	25.5	301	3.2	9,197
United States	25,614	63.7	22,697	60.8	2,917	12.9	20,997
Europe	3,964	9.9	4,007	10.7	(43)	(1.1)	3,910
Systems Solutions	284	0.7	271	0.7	13	4.8	269
Group Development	964	2.4	1,307	3.5	(343)	(26.2)	1,101
Group Headquarters & Group Services	(437)	(1.1)	(440)	(1.2)	3	0.7	(429)
Reconciliation	(17)	(0.0)	(47)	(0.1)	30	63.8	(28)
EBITDA AL (adjusted for special factors)	40,208	100.0	37,330	100.0	2,878	7.7	35,017

The United States, Germany, and Systems Solutions operating segments made a positive contribution to the development of adjusted EBITDA AL. In our United States operating segment, adjusted EBITDA AL increased by 12.9 %, essentially due to exchange rate effects. In organic terms, adjusted EBITDA AL grew by 0.1 % year-on-year. Adjusted core EBITDA AL increased by EUR 4.4 billion or 21.9 % to EUR 24.3 billion. Our Germany operating segment contributed to the increase thanks to high-value revenue growth and improved cost efficiency with 3.2 % higher adjusted EBITDA AL. In our Systems Solutions operating segment, adjusted EBITDA AL increased by 4.8 % or, in organic terms, by 0.9 %. Efficiency effects from our transformation program and increased revenue in our Digital Solutions and Road Charging portfolio units exceeded the decline in earnings in the traditional IT infrastructure business. Adjusted EBITDA AL in our Europe operating segment decreased by 1.1 %. In organic terms, however, adjusted EBITDA AL grew by 3.1 %, again making a significant positive contribution to earnings, with a positive net margin more than sufficient to offset the higher indirect costs. Adjusted EBITDA AL in our Group Development operating segment declined by 26.2 % year-on-year due to the sale of T-Mobile Netherlands as of March 31, 2022. In organic terms, it increased by 26.4 %, since the GD Towers business posted consistent growth on the back of a rising number of cell tower sites and was further strengthened by the development of the Austrian cell tower business.

EBITDA AL increased by EUR 2.1 billion or 6.2 % year-on-year to EUR 36.0 billion, with special factors changing from EUR -3.4 billion to EUR -4.2 billion. Expenses incurred in connection with staff-related measures, especially in the United States operating segment, increased by EUR 0.5 billion, and in connection with non-staff-related restructuring by EUR 0.2 billion against the prior year. Net expenses of EUR 2.3 billion were recorded as special factors under effects of deconsolidations, disposals and acquisitions. EUR 4.6 billion of this primarily related to expenses in connection with integration costs incurred as a result of the business combination of T-Mobile US and Sprint. These expenses included in particular discounts on terminal equipment for former Sprint customers whose devices can no longer be used in the T-Mobile US mobile network, and expenses arising in connection with the decommissioning of the former Sprint mobile network. The latter primarily comprise additional depreciation, amortization and impairment losses from reductions in the useful lives of leased network technology for cell sites in the United States. In connection with the agreement to sell the fiber-optic-based wireline business, T-Mobile US recorded expenses totaling EUR 0.7 billion in the third quarter of 2022 on account of payment obligations entered into. In addition to the agreed sale of the wireline business, a gain of EUR 0.1 billion from the consummated sale of IP addresses of the fiber-optic-based wireline network in the United States was recognized. Income of EUR 1.7 billion resulted from the deconsolidation of GlasfaserPlus, EUR 0.9 billion from the sale of T-Mobile Netherlands, and another EUR 0.1 billion from the deconsolidation of DIV II. In the prior year, net expenses of EUR 2.5 billion had been recorded as special factors under effects of deconsolidations, disposals and acquisitions. These expenses also primarily relate to the business combination of T-Mobile US and Sprint. The impairment losses recognized as special factors amounted to EUR 0.3 billion in the reporting year and mainly related to right-of-use assets used in connection with the former Sprint's fiber-optic-based wireline network. Other special factors affecting EBITDA AL amounted to EUR -0.3 billion and include net expenses (including insurance compensation) of EUR 0.4 billion in connection with the proceedings pending in consequence of the cyberattack on T-Mobile US in August 2021, as well as insurance compensation of EUR 0.2 billion in connection with damage sustained in the catastrophic flooding in North Rhine-Westphalia and Rhineland-Palatinate in July 2021.

For further information on the development of (adjusted) EBITDA AL in the segments, please refer to the section "[Development of business in the operating segments.](#)"

Profit/loss from operations (EBIT)

Group EBIT increased to EUR 16.2 billion, up EUR 3.1 billion or 23.8 % against the prior-year level. This increase is due in particular to the effects described under adjusted EBITDA AL and EBITDA AL. At EUR 27.8 billion, depreciation, amortization and impairment losses were EUR 0.3 billion higher than in the prior year.

Impairment losses increased by EUR 0.9 billion to EUR 1.2 billion, of which EUR 0.9 billion related to the United States operating segment, mainly in connection with assets of the former Sprint's fiber-optic-based fixed network. These impairment losses arose in part in connection with the sale of the business agreed in September 2022. Further impairment losses of EUR 0.1 billion related to the Systems Solutions operating segment and the Group Headquarters & Group Services segment. These related to follow-up investments in connection with assets previously impaired in the 2020 and 2021 financial years. Furthermore, despite the business outlook remaining positive, the substantial increase in the cost of capital in the reporting year prompted further impairment losses to be recognized on non-current assets at the end of 2022. In addition, impairment losses of EUR 0.1 billion related to the Europe operating segment in connection with non-current assets in the Romanian fixed-network business. The national company continues to operate in the structurally challenging and highly competitive Romanian market at prices that are low compared with other countries. In addition, high energy prices and sharp rises in interest rates had a negative impact on the enterprise value. The impairment losses recognized in the prior year amounted to EUR 0.3 billion and related primarily to the Systems Solutions operating segment and the Group Headquarters & Group Services segment.

By contrast, depreciation and amortization decreased by EUR 0.5 billion. In the Group Development operating segment, depreciation and amortization were down on the prior-year level in connection with the fact that T-Mobile Netherlands had been held for sale until it was sold and accordingly the related depreciation and amortization had been suspended, and in connection with its subsequent sale. In addition, depreciation and amortization were suspended for the GD Towers business entity, which has been held for sale since July 13, 2022. Depreciation on property, plant and equipment in the United States operating segment declined due to the ongoing strategic withdrawal from the terminal equipment lease business. By contrast, in the United States operating segment a reduction in the useful life of leased network technology for cell sites in connection with the business combination of T-Mobile US and Sprint, as well as the modification of existing arrangements between T-Mobile US and Crown Castle, mainly relating to the lease of cell sites from Crown Castle, resulted in higher depreciation of the corresponding right-of-use assets.

For further information on depreciation, amortization and impairment losses, please refer to Note 27 "[Depreciation, amortization and impairment losses](#)" in the notes to the consolidated financial statements.

For information on the agreement with DigitalBridge and Brookfield on GD Towers, and the presentation of GD Towers according to the management approach, including reconciliation table, please refer to the section "[Management of the Group](#)."

Profit before income taxes

Profit before income taxes increased by EUR 3.8 billion to EUR 11.7 billion. The loss from financial activities decreased year-on-year from EUR 5.1 billion to EUR 4.5 billion, with other financial income/expense improving from EUR -0.4 billion to EUR 1.4 billion. This was attributable in particular to positive measurement effects from a forward transaction to hedge the price of acquiring shares in T-Mobile US in the future and positive measurement effects from the amortization and subsequent measurement of the stock options received from SoftBank in June 2020 to buy shares in T-Mobile US. Less pronounced negative measurement effects from derivatives of T-Mobile US embedded in bonds compared with the prior-year period also contributed to this. The interest component from the measurement of provisions and liabilities increased by EUR 0.4 billion. This increase was mainly attributable to the subsequent measurement using actuarial principles of the present value of the provision recognized for the Civil Service Health Insurance Fund. However, finance costs also increased from EUR 4.6 billion to EUR 5.3 billion. This was primarily due to the modification of the arrangements between T-Mobile US and Crown Castle, which resulted in an increase in the carrying amounts of lease liabilities, as well as to variable-interest financial liabilities in connection with the rise in interest rates in the reporting year. The share of profit/loss of associates and joint ventures included in the consolidated financial statements using the equity method declined from EUR -0.1 billion to EUR -0.5 billion. This was due to an impairment loss of EUR 0.5 billion recognized in the reporting year on the carrying amount of the stake in GlasfaserPlus. The impairment loss was triggered by the current macroeconomic developments and the associated sharp rise in interest rates.

Net profit, adjusted net profit

Net profit increased year-on-year by EUR 3.8 billion to EUR 8.0 billion. The tax expense from continuing operations and the discontinued operation increased by EUR 0.4 billion to EUR 2.2 billion. Profit attributable to non-controlling interests decreased from EUR 1.9 billion to EUR 1.5 billion, with the decrease being primarily attributable to our United States operating segment. Excluding special factors, which had a negative overall effect of EUR 1.1 billion on net profit, adjusted net profit amounted to EUR 9.1 billion, up EUR 3.2 billion against the prior year.

For further information on tax expense, please refer to Note 32 "[Income taxes](#)" in the notes to the consolidated financial statements.

Earnings per share, adjusted earnings per share

Earnings per share is calculated as net profit divided by the weighted average number of ordinary shares outstanding, which totaled 4,972 million as of December 31, 2022. This resulted in earnings per share of EUR 1.61, compared with EUR 0.87 in the prior year. Earnings per share adjusted for special factors affecting net profit amounted to EUR 1.83 compared with EUR 1.22 in the prior year.

Reconciliations of financial performance indicators from the IFRS consolidated financial statements

A reconciliation of revenues disclosed in the consolidated financial statements, including their breakdown into revenue categories, to the “service revenue” financial performance indicator can be found in the following table:

billions of €					
	2022	2021	Change	Change %	
Net revenue	114.2	107.6	6.6	6.1	
Revenue from the sale of goods and merchandise	(19.9)	(19.6)	(0.3)	(1.5)	
Revenue from the use of entity assets by others	(2.2)	(3.8)	1.6	42.1	
Revenue from the rendering of services	92.0	84.2	7.8	9.3	
+/- Reconciliation to service revenue as financial performance indicator					
Adjustment of revenue from the rendering of services ^a	(1.2)	(2.2)	1.0	45.5	
Adjustment of revenue from the sale of goods and merchandise ^b	0.4	0.3	0.1	33.3	
Adjustment of revenue from the use of entity assets by others ^c	0.8	0.9	(0.1)	(11.1)	
Service revenue	91.9	83.1	8.8	10.6	

^a The definition of “service revenue” does not include, in particular: revenues from valued-added services, revenues from application and contract services, and other non-recurring/variable revenues.

^b Relates to revenues from the sale of hardware in connection with the ICT business.

^c Primarily relates to revenues from wholesale business (e.g., in connection with unbundled local loops and co-location spaces).

A reconciliation of the definition of EBITDA to the “after leases” indicator (EBITDA AL) can be found in the following table:

millions of €					
	2022	2021	Change	Change %	2020
EBITDA	43,986	40,539	3,447	8.5	38,633
Depreciation of right-of-use assets ^a	(6,507)	(5,547)	(960)	(17.3)	(4,530)
Interest expenses on recognized lease liabilities ^a	(1,489)	(1,099)	(390)	(35.5)	(925)
EBITDA AL	35,989	33,893	2,096	6.2	33,178
Special factors affecting EBITDA AL	(4,219)	(3,437)	(782)	(22.8)	(1,839)
EBITDA AL (adjusted for special factors)	40,208	37,330	2,878	7.7	35,017

^a Excluding finance leases at T-Mobile US.

The following table presents the reconciliation of net profit to net profit adjusted for special factors:

millions of €					
	2022	2021	Change	Change %	2020
Net profit (loss)	8,001	4,176	3,825	91.6	4,158
Special factors affecting EBITDA AL	(4,219)	(3,437)	(782)	(22.8)	(1,839)
Staff-related measures	(1,230)	(717)	(513)	(71.5)	(1,268)
Non-staff-related restructuring	(175)	(22)	(153)	n.a.	(32)
Effects of deconsolidations, disposals and acquisitions	(2,256)	(2,542)	286	11.3	(1,655)
Impairment losses on right-of-use assets	(276)	0	(276)	n.a.	0
Reversals of impairment losses	0	0	0	n.a.	1,655
Other	(283)	(156)	(127)	(81.4)	(539)
Special factors affecting net profit	3,139	1,751	1,388	79.3	283
Impairment losses	(989)	(258)	(731)	n.a.	(656)
Profit (loss) from financial activities	(487)	(139)	(348)	n.a.	(25)
Income taxes	1,936	1,064	872	82.0	730
Non-controlling interests	2,680	1,084	1,596	n.a.	234
Special factors	(1,080)	(1,686)	606	35.9	(1,557)
Net profit (loss) (adjusted for special factors)	9,081	5,862	3,219	54.9	5,715

The following table presents a reconciliation of EBITDA AL, EBIT, and net profit to the respective figures adjusted for **special factors**:

millions of €						
	EBITDA AL 2022	EBIT 2022	EBITDA AL 2021	EBIT 2021	EBITDA AL 2020	EBIT 2020
EBITDA AL/EBIT	35,989	16,159	33,893	13,057	33,178	12,804
Germany	1,162	1,162	(595)	(596)	(760)	(819)
Staff-related measures	(523)	(523)	(478)	(478)	(684)	(684)
Non-staff-related restructuring	(8)	(8)	(12)	(12)	(18)	(18)
Effects of deconsolidations, disposals and acquisitions	1,608	1,608	(3)	(3)	(18)	(18)
Impairment losses	0	0	0	(1)	0	(59)
Other	84	84	(102)	(102)	(40)	(40)
United States	(5,949)	(6,637)	(2,637)	(2,692)	(370)	(370)
Staff-related measures	(352)	(352)	(16)	(16)	(32)	(32)
Non-staff-related restructuring	0	0	0	0	0	0
Effects of deconsolidations, disposals and acquisitions	(4,956)	(5,084)	(2,621)	(2,618)	(1,522)	(1,522)
Impairment losses	(275)	(836)	0	(58)	0	0
Reversals of impairment losses	0	0	0	0	1,604	1,604
Other	(366)	(366)	0	0	(420)	(420)
Europe	(31)	(147)	11	11	(188)	(374)
Staff-related measures	(70)	(70)	83	83	(181)	(181)
Non-staff-related restructuring	0	0	(1)	(1)	0	0
Effects of deconsolidations, disposals and acquisitions	12	12	(39)	(39)	(6)	(6)
Impairment losses	0	(117)	0	0	0	(186)
Reversals of impairment losses	0	0	0	0	50	50
Other	27	27	(32)	(32)	(51)	(51)
Systems Solutions	(159)	(270)	(206)	(384)	(201)	(567)
Staff-related measures	(107)	(107)	(141)	(141)	(159)	(159)
Non-staff-related restructuring	(5)	(5)	(3)	(3)	(3)	(3)
Effects of deconsolidations, disposals and acquisitions	(2)	(2)	(39)	(39)	0	0
Impairment losses	0	(111)	0	(178)	0	(367)
Other	(44)	(44)	(24)	(24)	(39)	(39)
Group Development	992	992	173	173	(43)	(43)
Staff-related measures	(10)	(10)	(8)	(8)	(11)	(11)
Non-staff-related restructuring	0	0	0	0	0	0
Effects of deconsolidations, disposals and acquisitions	1,003	1,003	184	184	(30)	(30)
Impairment losses	0	0	0	0	0	0
Other	(1)	(1)	(3)	(3)	(2)	(2)
Group Headquarters & Group Services	(234)	(270)	(182)	(203)	(277)	(322)
Staff-related measures	(168)	(168)	(157)	(157)	(201)	(201)
Non-staff-related restructuring	(162)	(162)	(7)	(7)	(11)	(11)
Effects of deconsolidations, disposals and acquisitions	80	80	(23)	(23)	(78)	(78)
Impairment losses	0	(36)	0	(21)	0	(44)
Other	17	17	5	5	14	14
Group	(4,219)	(5,171)	(3,437)	(3,692)	(1,839)	(2,496)
Staff-related measures	(1,230)	(1,230)	(717)	(717)	(1,268)	(1,268)
Non-staff-related restructuring	(175)	(175)	(22)	(22)	(32)	(32)
Effects of deconsolidations, disposals and acquisitions	(2,256)	(2,384)	(2,542)	(2,538)	(1,655)	(1,655)
Impairment losses	(276)	(1,100)	0	(258)	0	(656)
Reversals of impairment losses	0	0	0	0	1,655	1,655
Other	(283)	(283)	(156)	(156)	(539)	(539)

millions of €

	EBITDA AL 2022	EBIT 2022	EBITDA AL 2021	EBIT 2021	EBITDA AL 2020	EBIT 2020
EBITDA AL/EBIT (adjusted for special factors)	40,208	21,330	37,330	16,749	35,017	15,300
Profit (loss) from financial activities (adjusted for special factors)		(3,931)		(4,998)		(4,103)
Profit (loss) before income taxes (adjusted for special factors)		17,399		11,752		11,197
Income taxes (adjusted for special factors)		(4,157)		(2,879)		(2,659)
Profit (loss) (adjusted for special factors)		13,242		8,873		8,538
Profit (loss) (adjusted for special factors) attributable to						
Owners of the parent (net profit (loss)) (adjusted for special factors)		9,081		5,862		5,715
Non-controlling interests (adjusted for special factors)		4,161		3,011		2,823

Net assets of the Group

Condensed consolidated statement of financial position

millions of €

	Dec. 31, 2022	Share of total assets/liabilities and shareholders' equity %	Dec. 31, 2021	Change	Dec. 31, 2020
Assets					
Cash and cash equivalents	5,767	1.9	7,617	(1,850)	12,939
Trade receivables	16,766	5.6	15,299	1,467	13,523
Intangible assets	140,600	47.1	132,647	7,953	118,066
Property, plant and equipment	65,729	22.0	61,770	3,959	60,975
Right-of-use assets	33,727	11.3	30,777	2,950	30,302
Current and non-current financial assets	9,910	3.3	8,888	1,022	9,640
Deferred tax assets	8,316	2.8	7,906	410	7,972
Non-current assets and disposal groups held for sale	4,683	1.6	4,856	(173)	1,113
Miscellaneous assets	13,092	4.4	11,867	1,225	10,387
Total assets	298,590	100.0	281,627	16,963	264,917
Liabilities and shareholders' equity					
Current and non-current financial liabilities	113,030	37.9	111,466	1,564	107,108
Current and non-current lease liabilities	38,792	13.0	33,133	5,659	32,715
Trade and other payables	12,035	4.0	10,452	1,583	9,760
Provisions for pensions and other employee benefits	4,150	1.4	6,134	(1,984)	7,684
Current and non-current other provisions	8,204	2.7	9,463	(1,259)	9,033
Deferred tax liabilities	22,800	7.6	19,809	2,991	17,260
Liabilities directly associated with non-current assets and disposal groups held for sale	3,347	1.1	1,365	1,982	449
Miscellaneous liabilities	8,912	3.0	8,336	576	8,358
Shareholders' equity	87,320	29.2	81,469	5,851	72,550
Total liabilities and shareholders' equity	298,590	100.0	281,627	16,963	264,917

Total assets amounted to EUR 298.6 billion as of December 31, 2022, up by EUR 17.0 billion against December 31, 2021. Exchange rate effects in particular, primarily from the translation of U.S. dollars into euros, had an increasing effect. This increase is also due to the sustained high level of investing activities including, among other investments, spectrum acquisitions in the United States operating segment. The agreement signed between T-Mobile US and Crown Castle on the modification of existing arrangements concerning the lease of cell sites also increased total assets. Total assets were reduced due to the sale of T-Mobile Netherlands.

Cash and cash equivalents decreased from EUR 7.6 billion year-on-year to EUR 5.8 billion.

For further information, please refer to Note 37 “Notes to the consolidated statement of cash flows” in the notes to the consolidated financial statements.

On the assets side, **trade receivables** amounted to EUR 16.8 billion, up by EUR 1.5 billion against the 2021 year-end. In the United States operating segment, the increase in receivables was mainly due to exchange rate effects. The increase in receivables there was also attributable to the Equipment Installment Plan owing to customer additions. The carrying amount in the Germany operating segment also increased as a result of the termination of factoring agreements. The carrying amount was reduced by higher allowances of customer receivables, in particular in the United States operating segment. These resulted from higher receivables and potential future macroeconomic effects. Furthermore, wholesale receivables in the United States declined.

Intangible assets increased by EUR 8.0 billion to EUR 140.6 billion. Of this figure, EUR 8.8 billion was attributable to additions, EUR 3.1 billion of which resulted from the acquisition of mobile spectrum and related almost entirely to the licenses acquired at the FCC Auctions 110 and 108 in the United States. Exchange rate effects, primarily from the translation of U.S. dollars into euros, also increased the carrying amount by EUR 6.8 billion. Positive effects from changes in the composition of the Group contributed EUR 0.1 billion to the increase in the carrying amount, while amortization and impairment losses of EUR 6.9 billion reduced it. This includes impairment losses of EUR 0.2 billion. The reclassification of assets worth EUR 0.6 billion to non-current assets and disposal groups held for sale also reduced the carrying amount. These relate to the agreements on the sale of the Group’s cell tower business in Germany and Austria (GD Towers) and of the wireline business in the United States. Disposals decreased the carrying amount by EUR 0.1 billion.

Property, plant and equipment increased by EUR 4.0 billion compared to December 31, 2021 to EUR 65.7 billion. Additions for the upgrade and build-out of the network and in connection with the broadband/fiber-optic build-out and mobile infrastructure build-out increased the carrying amount by EUR 18.2 billion. The modification of the arrangements between T-Mobile US and Crown Castle for existing cell sites increased the carrying amount by EUR 0.8 billion. Exchange rate effects, primarily from the translation of U.S. dollars into euros, also increased the carrying amount by EUR 1.5 billion. Reclassifications of lease assets upon expiry of the contractual lease term to property, plant and equipment, in the United States operating segment in particular, increased the carrying amount by EUR 0.6 billion, while depreciation and impairment losses of EUR 13.7 billion had an offsetting effect. This includes impairment losses of EUR 0.7 billion, mainly relating to the impairment test of the former Sprint’s fiber-optic-based wireline business, which was carried out in the second quarter of 2022, and the corresponding sale agreed in the third quarter of 2022. The reclassification of assets worth EUR 1.5 billion to non-current assets and disposal groups held for sale reduced the carrying amount. These relate to the agreements on the sale of GD Towers and of the wireline business in the United States. Disposals of EUR 1.1 billion also reduced the carrying amount.

Compared with December 31, 2021, **right-of-use assets** increased by EUR 3.0 billion to EUR 33.7 billion. This increase was driven by additions of EUR 10.5 billion, primarily as a result of the modification to existing leases agreed between T-Mobile US and Crown Castle in January 2022, mainly concerning the lease of Crown Castle’s cell sites. The modification of the arrangements resulted in an increase of USD 7.3 billion (EUR 6.6 billion) each in the right-of-use assets and in lease liabilities. Exchange rate effects, primarily from the translation of U.S. dollars into euros, also increased the carrying amount by EUR 2.0 billion. Depreciation, amortization and impairment losses of EUR 7.2 billion reduced the carrying amount. This included a EUR 1.6 billion increase in depreciation and amortization due to a reduction in the useful life of leased network technology for cell sites in the United States operating segment following the business combination of T-Mobile US and Sprint. This also includes impairment losses of EUR 0.3 billion, mainly relating to the impairment test of the former Sprint’s fiber-optic-based wireline assets, which was carried out in the second quarter of 2022, and the corresponding sale agreed in the third quarter of 2022. The reclassification of assets worth EUR 1.5 billion to non-current assets and disposal groups held for sale reduced the carrying amount. These relate to the agreements on the sale of GD Towers and of the wireline business in the United States. Reclassifications of lease assets upon expiry of the contractual lease term to property, plant and equipment, in the United States operating segment in particular, also reduced the carrying amount by EUR 0.6 billion. Disposals of EUR 0.3 billion also reduced the carrying amount.

Current and non-current **financial assets** increased by EUR 1.0 billion to EUR 9.9 billion. Originated loans and receivables increased by EUR 0.9 billion, mainly in connection with cash collateral deposited for forward-payer swaps. In connection with receivables from grants still to be received from funding projects for the broadband build-out in Germany, the carrying amount of other receivables increased by EUR 0.2 billion. The carrying amount of debt instruments measured at fair value through profit or loss increased by EUR 0.4 billion in connection with the sale of a 50 % stake in GlasfaserPlus and the recognition of a contingent consideration receivable. The carrying amount of derivatives with a hedging relationship decreased by EUR 0.5 billion, due on the one hand to the decrease in positive fair values from interest rate swaps in fair value hedges, which is primarily the result of a significant increase in the interest rate level. On the other hand, the fair values of interest rate and currency derivatives in cash flow hedges increased, primarily as a result of the significant rise in the interest rate level. The carrying amount of derivatives without a hedging relationship remained stable overall. This is due to a EUR 0.2 billion increase in the carrying amount of interest and currency derivatives. In connection with the stock options received from SoftBank to purchase shares in T-Mobile US, the carrying amount of the stock options recorded a net increase of EUR 0.1 billion against December 31, 2021. This was attributable to an increase of EUR 0.6 billion from positive measurement effects in connection with the development of the T-Mobile US share price and the amortization in full from the initial measurement of the stock

options at fair value. This was offset by the derecognition of the exercised options in April 2022, which had a fair value of EUR 0.5 billion at the time of exercising the stock options. The carrying amount of the derivatives without a hedging relationship decreased by EUR 0.3 billion in connection with negative measurement effects from derivatives embedded in bonds issued by T-Mobile US.

Non-current assets and disposal groups held for sale decreased by a net EUR 0.2 billion compared with December 31, 2021 to EUR 4.7 billion. The sale of T-Mobile Netherlands as of March 31, 2022 reduced the carrying amount by EUR 4.7 billion, and the sale of the 50 % stake in GlasfaserPlus on February 28, 2022 by EUR 0.1 billion. By contrast, the reclassification and continued recognition of the assets of GD Towers increased the carrying amount by EUR 4.2 billion, and those of the wireline business in the United States by EUR 0.3 billion. The assets were classified as held for sale as of December 31, 2022 on account of the sales agreements concluded.

For further information on the corporate transactions, please refer to the section [“Group organization.”](#)

Miscellaneous assets increased by EUR 1.2 billion to EUR 13.1 billion, EUR 0.6 billion of which was due to the increase in capitalized contract costs. This increase was attributable in particular to a higher level of capitalized costs of obtaining a contract in postpaid customer business in the United States and Germany operating segments. Contract assets increased by EUR 0.4 billion. This resulted in part from the increased marketing of the Equipment Installment Plan in the United States operating segment. Investments accounted for using the equity method also increased by EUR 0.4 billion, essentially as a result of the sale of the 50 % stake in GlasfaserPlus. Following the loss of control pursuant to the IFRSs as a result of the transaction, GlasfaserPlus was deconsolidated as of February 28, 2022. Since this date, the remaining 50 % of the shares in the joint venture have been included in the consolidated financial statements as an investment accounted for using the equity method. As of December 31, 2022, the carrying amount of the investment amounted to EUR 0.5 billion following recognition of an impairment loss of EUR 0.5 billion on the investment in the reporting year. The impairment loss was triggered by the current macroeconomic developments and the associated sharp rise in interest rates. In addition, DIV II was deconsolidated on August 2, 2022 as a result of the admission of new investors and the associated loss of control over the entity. Since then, the stake retained by the Group of 41.25 % has been included in the consolidated financial statements as an associate using the equity method. The carrying amount of the investment amounted to EUR 0.3 billion as of December 31, 2022. It was reduced by the disposal of 37.65 % of the shares in Cellnex Netherlands in the amount of EUR 0.4 billion as a result of the deconsolidation of DIV II. Inventories decreased by EUR 0.2 billion, due to the sale of terminal equipment in consequence of the impending market launch of new handset models, and warehouse closures at former Sprint sites in the United States operating segment. By contrast, inventories increased in the Germany and Europe operating segments, partly as a preventive measure in connection with the prevailing supply chain uncertainty. Exchange rate effects, in particular from the translation of U.S. dollars into euros, also contributed to the increase. Other assets increased by EUR 0.2 billion.

On the liabilities and shareholders' equity side, current and non-current **financial liabilities** increased by EUR 1.6 billion compared with the end of 2021 to a total of EUR 113.0 billion. The carrying amount of bonds and other securitized liabilities decreased by EUR 0.1 billion. Exchange rate effects, especially from the translation of U.S. dollars into euros, increased the carrying amount of bonds and other securitized liabilities by EUR 3.9 billion. Senior notes issued by T-Mobile US in the reporting year with a total volume of USD 3.0 billion (EUR 3.0 billion) and asset-backed securities (ABS notes) with a volume of USD 0.8 billion (EUR 0.8 billion) increased the carrying amount. The net change of EUR 2.3 billion in commercial paper also increased the carrying amount. Repayments by T-Mobile US of bonds with a total volume of USD 2.8 billion (EUR 2.7 billion) and outside of the United States of EUR bonds with a volume of EUR 2.6 billion and a GBP bond with a volume of GBP 0.7 billion (EUR 0.8 billion) reduced the carrying amount. In addition, the carrying amount decreased by EUR 3.5 billion in connection with measurement effects from derivatives with a hedging relationship, the offsetting entry for which is posted under bonds and other securitized liabilities. Liabilities with the right of creditors to priority repayment in the event of default decreased by EUR 0.3 billion, mainly due to repayments. The carrying amount of other interest-bearing liabilities decreased by EUR 0.3 billion compared with the prior-year level. In connection with cash collateral received for derivative financial instruments – primarily forward-payer swaps – the carrying amount of other interest-bearing liabilities decreased by EUR 1.5 billion. By contrast, the modification of the arrangements between T-Mobile US and Crown Castle regarding cell sites increased the carrying amount by EUR 0.8 billion. In addition, liabilities recognized by T-Mobile US for future payments for IP transit services in connection with the agreement on the sale of the wireline business increased the carrying amount by EUR 0.6 billion. The carrying amount of derivative financial liabilities increased by EUR 2.2 billion to EUR 2.9 billion. Negative measurement effects of derivatives with a hedging relationship increased the carrying amount, mainly due to the increase in negative fair values from interest rate swaps in fair value hedges, which is primarily the result of a significant increase in the interest rate level. The carrying amount of derivatives without a hedging relationship decreased due to positive measurement effects from a forward transaction to hedge the price of acquiring shares in T-Mobile US in the future.

Current and non-current **lease liabilities** increased by EUR 5.7 billion to EUR 38.8 billion compared with December 31, 2021. This increase primarily relates to the modification of the arrangements between T-Mobile US and Crown Castle, which resulted in an increase in the carrying amounts of lease liabilities of EUR 6.6 billion. Exchange rate effects, in particular from the translation of U.S. dollars into euros, raised lease liabilities by EUR 2.1 billion. The reclassification of lease liabilities to liabilities directly associated with non-current assets and disposal groups held for sale reduced the carrying amount by EUR 1.8 billion. These relate to the agreements on the sale of GD Towers and of the wireline business in the United States. The carrying amount was further reduced, in part in connection with the decommissioning of former Sprint cell sites and the closure of some former Sprint shops in the United States operating segment. The carrying amount was also reduced by declines in the Group Headquarters & Group Services segment and in the Systems Solutions operating segment.

Trade and other payables increased by EUR 1.6 billion to EUR 12.0 billion, due in particular to the sharp rise in procurement volumes in the United States, Germany, and Europe operating segments. In the United States operating segment, liabilities increased in connection with the acquisition of non-current assets and vis-à-vis terminal equipment vendors. The increase was also driven in part by exchange rates. The reclassification to liabilities directly associated with non-current assets and disposal groups held for sale reduced the carrying amount. These relate to the agreements on the sale of GD Towers and of the wireline business in the United States.

Provisions for pensions and other employee benefits decreased by EUR 2.0 billion compared with December 31, 2021 to EUR 4.2 billion, mainly due to the increase in the discount rate. The development of the fair values of plan assets had an offsetting effect. Overall, the remeasurement of defined benefit plans resulted in an actuarial gain of EUR 1.8 billion.

Current and non-current **other provisions** decreased by EUR 1.3 billion compared with the end of 2021 to EUR 8.2 billion. Other provisions for personnel costs decreased by EUR 0.7 billion, mainly in connection with a decline in the provision recognized for the Civil Health Insurance Fund (Postbeamtenkrankenkasse – PBeaKK). This is due to a significant increase in the interest rate level. The provisions for restoration obligations decreased by EUR 1.1 billion in connection with reclassifications to liabilities directly associated with non-current assets and disposal groups held for sale, in particular in connection with the agreed sale of GD Towers. By contrast, the provisions for litigation risks increased by a net amount of EUR 0.2 billion, mainly in connection with the proceedings pending in consequence of the cyberattack on T-Mobile US in August 2021. The provisions recognized for sales and procurement support also increased by EUR 0.2 billion. Exchange rate effects, in particular from the translation of U.S. dollars into euros, also ultimately contributed to this increase.

Liabilities directly associated with non-current assets and disposal groups held for sale increased by EUR 2.0 billion against December 31, 2021 to EUR 3.3 billion. The sale of T-Mobile Netherlands as of March 31, 2022 reduced the carrying amount by EUR 1.4 billion. By contrast, the reclassification and continued recognition of the liabilities of GD Towers increased the carrying amount by EUR 3.0 billion, and those of the wireline business in the United States by EUR 0.4 billion.

For further information on the corporate transactions, please refer to the section "[Group organization.](#)"

Miscellaneous liabilities increased by EUR 0.6 billion compared to December 31, 2021 to EUR 8.9 billion, due in particular to the increase in contract liabilities by EUR 0.3 billion and the increase in income tax liabilities, also by EUR 0.3 billion.

Shareholders' equity increased from EUR 81.5 billion as of December 31, 2021 to EUR 87.3 billion. Profit of EUR 9.5 billion, other comprehensive income of EUR 5.6 billion, and capital increases from share-based payments of EUR 0.7 billion contributed to this increase. Shareholders' equity was reduced in connection with dividend payments for the 2021 financial year to Deutsche Telekom AG shareholders in the amount of EUR 3.2 billion and to other shareholders of subsidiaries in the amount of EUR 0.2 billion. Transactions with owners also reduced the carrying amount by EUR 6.0 billion, mainly due to the acquisition of additional T-Mobile US shares to increase the stake and due to the share buy-back program underway at T-Mobile US. Changes in the composition of the Group resulting from the sale of T-Mobile Netherlands reduced the carrying amount of shareholders' equity by EUR 0.6 billion.

Profitability and financial position of the Group

Profitability

millions of €	2022	2021	2020
Profit (loss) from operations (EBIT)	16,159	13,057	12,804
Share of profit (loss) of associates and joint ventures accounted for using the equity method	(522)	(102)	(12)
Net operating profit (NOP)	15,636	12,956	12,792
Tax (imputed tax rate 2022: 27.8 %; 2021: 27.8 %; 2020: 27.8 %)	(4,347)	(3,602)	(3,556)
Net operating profit after taxes (NOPAT)	11,289	9,354	9,236
Cash and cash equivalents	5,767	7,617	12,939
Intangible assets	140,600	132,647	118,066
Property, plant and equipment	65,729	61,770	60,975
Right-of-use assets	33,727	30,777	30,302
Non-current assets and disposal groups held for sale and liabilities ^a	1,336	3,491	664
Investments accounted for using the equity method	1,318	938	543
Operating working capital	7,370	7,702	6,458
Other provisions	(8,204)	(9,463)	(9,033)
Net operating assets (NOA)	247,643	235,479	220,914
Average net operating assets (Ø NOA)	253,389	229,035	201,545
ROCE	4.5	4.1	4.6

^a Excluding the carrying amounts of companies accounted for using the equity method.

ROCE increased by 0.4 percentage points in the reporting period to 4.5 %. This was due to stronger percentage growth in net operating profit after taxes (NOPAT) than in the average amount of net operating assets (NOA) over the year. The positive development in NOPAT year-on-year was driven primarily by the increase in adjusted EBITDA AL. Higher total expenses classified as special factors – mainly in the United States operating segment – had an offsetting effect. These arose in connection with higher integration and restructuring costs to realize cost efficiencies as a result of the business combination of T-Mobile US and Sprint and the reduction in the useful life of leased network technology for cell sites. The increase in NOA is due in part to the acquisition of additional spectrum licenses by T-Mobile US and the associated increase in intangible assets. In addition, the development of NOA reflects our consistently high investment volume.

In 2022, NOPAT amounted to EUR 11.3 billion, up from EUR 9.4 billion in the prior year. The average amount of net operating assets (NOA) increased to EUR 253.4 billion in 2022 from EUR 229.0 billion in the prior year.

For further information on the definition of ROCE and the methods used to calculate this key performance indicator, please refer to the section “Management of the Group.”

Finance management

Our finance management ensures our Group’s ongoing solvency and hence its financial equilibrium. The fundamentals of Deutsche Telekom’s finance policy are established each year by the Board of Management and overseen by the Supervisory Board. Group Treasury is responsible for implementing the finance policy and for ongoing risk management. In order to ensure we have scope for financing, we continuously monitor the development of net debt, Deutsche Telekom AG’s rating, financial flexibility, and free cash flow AL.

Calculation of net debt

millions of €

	Dec. 31, 2022 ^a	Dec. 31, 2021 ^b	Change	Change %	Dec. 31, 2020
Bonds and other securitized liabilities	93,802	93,857	(55)	(0.1)	87,702
Liabilities to banks	4,122	4,003	119	3.0	5,257
Other financial liabilities	15,107	13,730	1,377	10.0	14,149
Lease liabilities	41,063	33,767	7,296	21.6	32,715
Financial liabilities and lease liabilities	154,093	145,357	8,736	6.0	139,823
Accrued interest	(999)	(1,012)	13	1.3	(1,035)
Other	(805)	(855)	50	5.8	(703)
Gross debt	152,289	143,490	8,799	6.1	138,085
Cash and cash equivalents	5,767	7,617	(1,850)	(24.3)	12,939
Derivative financial assets	2,273	2,762	(489)	(17.7)	4,038
Other financial assets	1,824	969	855	88.2	881
Net debt	142,425	132,142	10,283	7.8	120,227
Lease liabilities ^c	38,692	31,493	7,199	22.9	30,671
Net debt AL	103,733	100,649	3,084	3.1	89,556

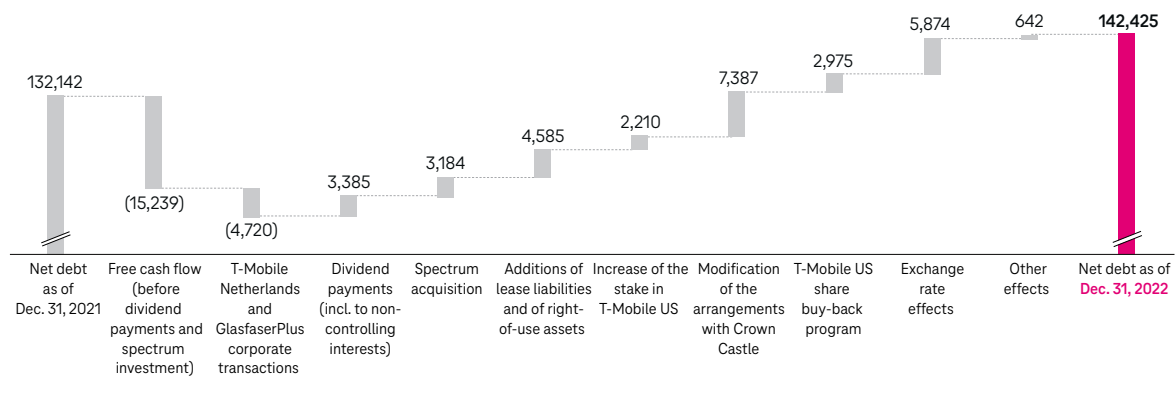
^a Including the net debt of the discontinued operation GD Towers and of the wireline business at T-Mobile US included under liabilities directly associated with non-current assets and disposal groups held for sale as of December 31, 2022.

^b Including the net debt of T-Mobile Netherlands included under liabilities directly associated with non-current assets and disposal groups held for sale as of December 31, 2021.

^c Excluding finance leases at T-Mobile US.

Changes in net debt

millions of €



The modification of the arrangements between T-Mobile US and Crown Castle resulted in an overall increase in net debt of EUR 7.4 billion, due to an increase in right-of-use assets and in lease liabilities of EUR 6.6 billion each and an increase in property, plant and equipment and in other financial liabilities of EUR 0.8 billion each. Other effects of EUR 0.6 billion include, among other factors, the recognition of liabilities for the acquisition of media broadcasting rights, share buy-backs at our subsidiaries, and contrasting measurement effects in connection with derivatives.

Other financing options

Off-balance-sheet financing instruments mainly relate to the sale of receivables by means of factoring. Total receivables sold as of December 31, 2022 amounted to EUR 2.8 billion (December 31, 2021: EUR 3.3 billion). At the end of 2022, this solely related to factoring agreements in the United States operating segment. The year-on-year decline was mainly attributable to the scheduled termination of factoring agreements in the Germany operating segment. The agreements are used in particular for active receivables management.

The rating of Deutsche Telekom AG

	Standard & Poor's	Moody's	Fitch
Long-term rating/outlook			
Dec. 31, 2020	BBB/stable	Baa1/negative	BBB+/stable
Dec. 31, 2021	BBB/stable	Baa1/stable	BBB+/stable
Dec. 31, 2022	BBB/positive	Baa1/stable	BBB+/stable
Short-term rating	A-2	P-2	F2

On April 22, 2022, the rating agency Standard & Poor's raised its rating outlook for Deutsche Telekom AG from "stable" to "positive" and also confirmed its long-term rating of BBB. Standard & Poor's considers an upgrade to our long-term rating within the next two years to be possible. We are therefore still a solid investment-grade company with access to the international capital markets.

Financial flexibility

	2022	2021	2020
Relative debt^a			
$\frac{\text{Net debt}}{\text{EBITDA (adjusted for special factors)}}$	3.07x	3.06x	2.78x
Equity ratio	29.2	28.9	27.4

^a Relative debt is calculated on a quarterly basis and the calculation of the figure for 2020 includes as an input for the first quarter of 2020 historic pro forma figures for Sprint, which was included in the United States operating segment.

To ensure financial flexibility, we primarily use the KPI "relative debt." This is a core component of our finance strategy and an important performance indicator for investors, analysts, and rating agencies. At 3.07x, we have deviated from the target range of 2.25x to 2.75x in the reporting year, as expected, on account of the business combination of T-Mobile US and Sprint. We expect to be back in the target range by the end of 2024.

Calculation of free cash flow AL

millions of €

	2022	2021	Change	Change %	2020
Net cash from operating activities	35,819	32,171	3,648	11.3	23,743
Interest payments for zero-coupon bonds	0	0	0	n.a.	1,600
Termination of forward-payer swaps at T-Mobile US	0	0	0	n.a.	2,158
Net cash from operating activities^a	35,819	32,171	3,648	11.3	27,501
Cash outflows for investments in intangible assets	(7,551)	(12,749)	5,198	40.8	(5,756)
Cash outflows for investments in property, plant and equipment	(16,563)	(13,616)	(2,947)	(21.6)	(12,938)
Cash capex	(24,114)	(26,366)	2,252	8.5	(18,694)
Spectrum investment	3,096	8,388	(5,292)	(63.1)	1,714
Cash capex (before spectrum investment)	(21,019)	(17,978)	(3,041)	(16.9)	(16,980)
Proceeds from the disposal of intangible assets (excluding goodwill) and property, plant and equipment	439	139	300	n.a.	236
Free cash flow (before dividend payments and spectrum investment)^a	15,239	14,332	907	6.3	10,756
Principal portion of repayment of lease liabilities ^b	(3,769)	(5,521)	1,752	31.7	(4,468)
Free cash flow AL (before dividend payments and spectrum investment)^a	11,470	8,810	2,660	30.2	6,288

^a Before interest payments for zero-coupon bonds and before termination of forward-payer swaps at T-Mobile US (both in 2020).

^b Excluding finance leases at T-Mobile US.

Free cash flow AL (before dividend payments and spectrum investment) increased by EUR 2.7 billion year-on-year to EUR 11.5 billion. The following effects impacted on this development:

Net cash from operating activities increased by EUR 3.6 billion to EUR 35.8 billion on the back of the good business performance. Exchange rate effects also had an increasing effect on net cash from operating activities. Factoring agreements resulted in positive effects of EUR 0.1 billion on net cash from operating activities in the reporting year. In the prior year, factoring agreements had had negative effects of EUR 0.1 billion. Higher cash outflows in connection with the integration of Sprint in the United States and an increase of EUR 0.4 billion in net interest payments in particular had a decreasing effect.

Cash capex (before spectrum investment) increased by EUR 3.0 billion to EUR 21.0 billion. Cash capex in the United States operating segment increased by EUR 3.0 billion to EUR 13.4 billion, mainly as a result of the accelerated build-out of the 5G network, the integration of Sprint, and exchange rate effects. In the Germany operating segment, cash capex increased by EUR 0.3 billion. Capital expenditure in the Germany operating segment totaled around EUR 4.4 billion in 2022, in particular for the build-out of the fiber-optic and 5G networks. In the Europe operating segment, our investments remained stable at EUR 1.8 billion. Here, we also continue to invest in the provision of broadband and fiber-optic technology and in 5G as part of our integrated network strategy. Cash capex in the Group Development operating segment totaled EUR 0.3 billion and was thus down EUR 0.2 billion year-on-year. The reduction is mainly due to the sale of T-Mobile Netherlands and lower build-out investments made by GD Towers compared with the prior year.

Lower cash outflows for the decrease in the principal portion of repayments of lease liabilities were due in particular to leases in the United States operating segment.

For further information on the statement of cash flows, please refer to Note 37 “Notes to the consolidated statement of cash flows” in the notes to the consolidated financial statements.

Development of business in the operating segments

Gross vs. net recognition of revenues – change in the principal/agent consideration. In light of the IFRS Interpretations Committee’s agenda decision published in May 2022 on transactions involving the commercial resale of software, Deutsche Telekom has implemented comprehensive changes to its accounting practices with respect to the recognition of gross vs. net revenues, effective the start of the third quarter of 2022. The prior-year comparatives for revenue and order entry were adjusted with retrospective effect.

For further information on the change in policy, please refer to the section “Development of business in the Group.”

Reassignment of the security business. Effective July 1, 2022, Deutsche Telekom reassigned its subsidiary Deutsche Telekom Security and the security business in Germany, Austria, Switzerland, Hungary, and Slovakia from the Systems Solutions operating segment to the Germany operating segment in order to maintain a consistent focus on implementing our Group strategy pillar “Lead in business productivity.” Prior-year comparatives in both of the segments affected concerning the development of operations, customer development, headcount development, and order entry were adjusted retrospectively.

Germany

Customer development

thousands	Dec. 31, 2022	Dec. 31, 2021	Change	Change %	Dec. 31, 2020
Mobile customers	54,249	53,211	1,038	2.0	48,213
Contract customers ^a	23,791	23,129	662	2.9	25,975
Prepaid customers ^{a, b}	30,458	30,081	377	1.3	22,239
Fixed-network lines	17,363	17,525	(162)	(0.9)	17,590
Retail broadband lines	14,715	14,478	237	1.6	14,118
Of which: optical fiber ^c	12,112	10,379	1,733	16.7	9,515
Television (IPTV, satellite)	4,122	4,001	121	3.0	3,864
Unbundled local loop lines (ULLs)	3,136	3,622	(486)	(13.4)	4,101
Wholesale broadband lines	8,045	7,948	97	1.2	7,733
Of which: optical fiber	6,970	6,778	192	2.8	6,433

^a As of January 1, 2022, around 178 thousand consumers previously recorded under contract customers were reclassified as prepaid customers. Prior-year comparatives were not adjusted.

^b Due to a network switchover, a portion of our prepaid customers were migrated to another provider as of the end of the third quarter of 2022.

^c Since June 1, 2022, we have migrated customers to fiber-optic lines under our “Turn customers into fans” (Kunden zu Fans machen) initiative. In the fourth quarter of 2022, the number of lines upgraded as part of this initiative so far totaled around 1 million.

Total

In Germany we continue to be market leader both in terms of fixed-network and mobile revenues. This success is attributable to our high-performance networks, a broad product portfolio, and good service. We want to offer our customers a seamless and technology-neutral telecommunications experience. We regularly adapt our product portfolio to address the needs of our customers. As of July 1, 2022, we launched the new MagentaMobil rate plans.

Demand remained high for our fiber-optic-based lines. The total number of these customer lines increased to around 19.1 million overall by the end of December 2022. In 2022, 1.9 million customers in Germany received a fiber-optic-based line from us. Two key factors are driving this strong growth: demand for higher bandwidths, and the technical migration of customer lines to optical fiber under our “Turn customers into fans” (Kunden zu Fans machen) initiative launched as of June 1, 2022.

Mobile communications

The number of high-value mobile contract customers under the Telekom and congstar brands grew by 979 thousand customers overall. Sustained high demand for mobile rate plans with data volumes continues to drive this trend. A portion of prepaid customers were migrated to another network provider at the end of the third quarter of 2022. Furthermore, as of January 1, 2022, a portion of consumers previously reported under contract customers were reclassified as prepaid customers. Allowing for this change in disclosure, the number of prepaid customers increased by 199 thousand.

Fixed network

The fixed-network broadband market hosts a large number of players with differing infrastructures – from national through to regional providers. In order to consolidate our position on the market as Germany’s leading telecommunications provider, we continue to add new offerings to our portfolio.

The number of broadband lines increased by 237 thousand to 14.7 million in 2022, with growth accelerating again as of the end of 2022. Almost 40 % of the customers subscribed to a rate plan with speeds of 100 Mbit/s or higher. We recorded an increase of 121 thousand in the number of TV customers compared with year-end 2021. The number of fixed-network lines remained more or less stable at 17.4 million lines.

Wholesale

As of December 31, 2022, fiber-optic-based lines accounted for 62.3 % of all lines – 3.7 percentage points more than at the end of 2021. This growth is a result of the demand for our commitment agreements. Rising demand among retail customers for higher-bandwidth lines also contributed to the increase. The number of unbundled local loop lines decreased by 486 thousand compared with the end of the prior year, partly as a result of the shift to higher-value fiber-optic-based lines and partly from consumers switching to other providers. In addition, our wholesale customers are migrating their retail customers to their own fiber-optic-based lines. The total number of wholesale lines at the end of 2022 was around 11.2 million.

Development of operations

millions of €

	2022	2021	Change	Change %	2020
Net revenue	24,505	24,050	455	1.9	23,712
Consumers	12,370	12,122	248	2.0	11,680
Business Customers	9,040	8,922	118	1.3	8,901
Wholesale	2,676	2,709	(33)	(1.2)	2,922
Other	419	297	122	41.1	209
Service revenue	21,533	21,212	321	1.5	20,940
EBITDA	11,025	8,976	2,049	22.8	8,481
Special factors affecting EBITDA	1,162	(595)	1,757	n.a.	(760)
EBITDA (adjusted for special factors)	9,864	9,572	292	3.1	9,242
EBITDA AL	10,998	8,941	2,057	23.0	8,437
Special factors affecting EBITDA AL	1,162	(595)	1,757	n.a.	(760)
EBITDA AL (adjusted for special factors)	9,837	9,536	301	3.2	9,197
EBITDA AL margin (adjusted for special factors)	% 40.1	39.7			38.8
Depreciation, amortization and impairment losses	(4,019)	(4,020)	1	0.0	(4,522)
Profit (loss) from operations (EBIT)	7,006	4,956	2,050	41.4	3,959
EBIT margin	% 28.6	20.6			16.7
Cash capex	(4,399)	(4,119)	(280)	(6.8)	(4,195)
Cash capex (before spectrum investment)	(4,399)	(4,119)	(280)	(6.8)	(4,180)

Net revenue, service revenue

In 2022, we generated revenue of EUR 24.5 billion, which was up by 1.9 % year-on-year. The growth in service revenues of 1.5 % was attributable to increased revenue in the fixed-network core business, largely broadband-driven, and in mobile business.

Revenue from **Consumers** increased by 2.0 % compared with the prior year. Revenue from broadband business grew by 6.1%, due in part to the positive effects from customer appreciation for stable data lines and high bandwidths. Fixed-network terminal equipment business posted growth of 1.6 % on the back of demand on the customer side for terminal equipment lease models. Volume-driven declines in revenue from voice components continued to impact on traditional fixed-network business. Mobile business increased by 1.4 % thanks to higher service revenues, mainly due to positive customer development in our second brand congstar and general trends of recovery, including a return to travel and other recreational activities.

Revenue from **Business Customers** was up by 1.3 % year-on-year. If the one-time effect from the public sector in the prior year is taken into account, operating revenue would have increased by 2.3 %. The mobile business grew by 6.9 % due to positive revenue from terminal equipment business and ongoing customer additions.

Wholesale revenue was down at the end of 2022 by 1.2 % year-on-year. The positive trend in the number of fiber-optic-based lines continued, with an increase of 2.8 % compared with the prior year. However, this was not enough to offset the decrease in revenues of 13.4 % from declining volumes of unbundled local loop lines. Network services revenue was down against the prior-year level, mainly due to product migrations that enable our customers to optimize their operations.

Adjusted EBITDA AL, EBITDA AL

Adjusted EBITDA AL increased by EUR 301 million or 3.2 % year-on-year to EUR 9.8 billion. Our adjusted EBITDA AL margin increased to 40.1 %, up from 39.7 % in the prior year. The main reasons for this increase are a sound operational development, driven by high-value revenue growth, and enhanced cost efficiency. Lower personnel costs resulting, among other factors, from the smaller headcount and the ongoing implementation of efficiency enhancement and digitalization measures reduced costs.

The special factors affecting adjusted EBITDA AL mainly included the gain on deconsolidation of GlasfaserPlus (EUR 1.7 billion) and insurance compensation in connection with damage sustained in the catastrophic flooding in July 2021 (EUR 0.2 billion). Expenses for socially responsible instruments in connection with staff restructuring also had an effect. EBITDA AL increased by EUR 2.1 billion to EUR 11.0 billion.

| For further information on the joint venture GlasfaserPlus with IFM, please refer to the section "[Group organization](#)."

Profit/loss from operations (EBIT)

Profit from operations amounted to EUR 7.0 billion, an increase of 41.4 % year-on-year. The positive trend in adjusted EBITDA AL together with the gain on deconsolidation of GlasfaserPlus contributed to this increase. Depreciation, amortization and impairment losses were at the same level as a year earlier.

Cash capex (before spectrum investment), cash capex

Cash capex increased by EUR 280 million or 6.8 % compared with the prior year. Capital expenditure totaled around EUR 4.4 billion in 2022, with much of this figure going towards the build-out of our fiber-optic and 5G networks. Around 5.4 million households in Germany had the option of a direct connection to our fiber-optic network as of the end of 2022. In mobile communications, our customers benefit from greater LTE and 5G network coverage. 94.8 % of German households can already use 5G.

United States

Customer development

thousands	Dec. 31, 2022	Dec. 31, 2021	Change	Change %	Dec. 31, 2020
Customers	113,598	108,719	4,879	4.5	102,064
Postpaid customers	92,232	87,663	4,569	5.2	81,350
Postpaid phone customers ^{a, b}	72,834	70,262	2,572	3.7	66,618
Other postpaid customers ^{a, b}	19,398	17,401	1,997	11.5	14,732
Prepaid customers	21,366	21,056	310	1.5	20,714

^a Customers impacted by the decommissioning of the legacy Sprint CDMA and LTE and T-Mobile US UMTS networks have been excluded from our customer base resulting in the removal of 212 thousand postpaid phone customers and 349 thousand postpaid other customers in the first quarter of 2022 and 284 thousand postpaid phone customers, 946 thousand postpaid other customers and 28 thousand prepaid customers in the second quarter of 2022. In connection with our acquisition of companies, we included a base adjustment in the first quarter of 2022 to increase postpaid phone customers by 17 thousand and reduce postpaid other customers by 14 thousand. Certain customers now serviced through reseller contracts were removed from our reported postpaid customer base resulting in the removal of 42 thousand postpaid phone customers and 20 thousand postpaid other customers in the second quarter of 2022.

^b In the first quarter of 2021, we acquired 11 thousand postpaid phone customers and 1 thousand postpaid other customers through our acquisition of an affiliate. In the third quarter of 2021, we acquired 716 thousand postpaid phone customers and 90 thousand postpaid other customers through our acquisition of the Wireless Assets from Shentel.

Customers

At December 31, 2022, the United States operating segment (T-Mobile US) had 113.6 million customers, compared to 108.7 million customers at December 31, 2021. Net customer additions were 6.8 million in 2022, compared to 5.8 million in 2021 due to the factors described below.

Postpaid net customer additions reached a record 6.4 million in 2022, compared to 5.5 million in 2021 and again exceeded the high end of the company's most recently increased annual guidance range. This increase resulted from higher postpaid other net customer additions, primarily due to an increase in High Speed Internet net customer additions and other connected devices, partially offset by lower net additions from mobile internet devices. In addition, the increase resulted from higher postpaid phone net customer additions, primarily due to lower churn, partially offset by lower gross additions driven by industry switching activity normalizing closer to pre Pandemic levels. High Speed Internet net customer additions included in postpaid other net customer additions were 1.8 million and 546 thousand in 2022 and 2021, respectively.

Prepaid net customer additions were 338 thousand in 2022, compared to 342 thousand in 2021. This decrease was primarily due to the continued industry shift to postpaid plans, partially offset by the introduction of our High Speed Internet offering and lower churn. High Speed Internet net customer additions included in prepaid net customer additions were 236 thousand in 2022. Our prepaid High Speed Internet launch was in the first quarter of 2022. Therefore, there were no prepaid High Speed Internet net customer additions in 2021.

Development of operations

millions of €	2022	2021	Change	Change %	2020
Net revenue	75,436	67,791	7,645	11.3	60,702
Service revenue	58,219	48,361	9,858	20.4	43,766
EBITDA	26,707	25,555	1,152	4.5	24,852
Special factors affecting EBITDA	(4,155)	(1,836)	(2,319)	n.a.	(270)
EBITDA (adjusted for special factors)	30,862	27,392	3,470	12.7	25,122
EBITDA AL	19,665	20,060	(395)	(2.0)	20,628
Special factors affecting EBITDA AL	(5,949)	(2,637)	(3,312)	n.a.	(370)
EBITDA AL (adjusted for special factors)	25,614	22,697	2,917	12.9	20,997
Core EBITDA AL (adjusted for special factors) ^a	24,280	19,912	4,368	21.9	17,366
EBITDA AL margin (adjusted for special factors) %	34.0	33.5			34.6
Depreciation, amortization and impairment losses	(19,237)	(18,338)	(899)	(4.9)	(15,665)
Profit (loss) from operations (EBIT)	7,470	7,217	253	3.5	9,187
EBIT margin %	9.9	10.6			15.1
Cash capex	(16,340)	(18,594)	2,254	12.1	(10,394)
Cash capex (before spectrum investment)	(13,361)	(10,328)	(3,033)	(29.4)	(9,286)

^a Adjusted core EBITDA AL is distinguished by excluding revenue from terminal equipment leases from adjusted EBITDA AL, thereby presenting operational development undistorted by the withdrawal from the terminal equipment lease business.

Revenue, service revenue

Total revenue for the United States operating segment of EUR 75.4 billion in 2022 increased by 11.3 percent, compared to EUR 67.8 billion in 2021. In U.S. dollars, T-Mobile US' total revenues decreased slightly during the same period. Total revenues decreased primarily due to lower equipment revenues, mostly offset by higher service revenues. The components of these changes are described below.

Service revenues increased in 2022 by 20.4 percent to EUR 58.2 billion. In organic terms, service revenues increased by 4.9 percent year-on-year. This increase resulted from higher postpaid revenues primarily from higher average postpaid accounts and higher postpaid ARPA (Average Revenue per Account). In addition, service revenues increased due to higher prepaid revenues primarily from higher average prepaid customers. This increase was partially offset by lower wholesale and other service revenues primarily from lower advertising, MVNO and Wireline revenues, partially offset by higher Lifeline revenues.

Equipment revenues decreased in 2022 primarily from a decrease in lease revenues and customer purchases of leased devices primarily due to a lower number of customer devices under lease as a result of the continued strategic shift in device financing from leasing to equipment installment plans (EIP). In addition, equipment revenues decreased due to a decrease in the number of devices sold primarily driven by lower prepaid sales, partially offset by higher upgrade volume for Sprint customers to facilitate their migration to the T-Mobile US' network. In addition, equipment revenues decreased due to slightly lower average revenue per device sold, primarily driven by higher promotions, which included promotions for Sprint customers to facilitate their migration to the T-Mobile US' network, and an increase in contra-revenue primarily driven by higher imputed interest rates on EIP.

Adjusted EBITDA AL, EBITDA AL

In euros, adjusted EBITDA AL increased by 12.9 percent to EUR 25.6 billion in 2022, compared to EUR 22.7 billion in 2021. The adjusted EBITDA AL margin increased to 34.0 percent in 2022, compared to 33.5 percent in 2021. In U.S. dollars, adjusted EBITDA AL remained relatively flat during the same period. Adjusted EBITDA AL increased primarily due to higher service revenue as discussed above, lower cost of equipment sales and cost of services excluding Sprint Merger-related costs and higher realized synergies. This increase was offset by lower equipment revenues, higher bad debt expense and losses from sales of receivables driven by higher receivable balances, as well as normalization relative to muted pandemic levels in 2021 and estimated potential future macroeconomic impacts and higher costs related to outsourced functions. In U.S. dollars, lease revenues decreased as a result of the continued strategic shift in device financing from leasing to EIP by 57.2 percent in 2022.

Adjusted core EBITDA AL increased by 21.9 percent to EUR 24.3 billion in 2022, compared to EUR 19.9 billion in 2021. In U.S. dollars, adjusted core EBITDA AL increased by 8.4 percent during the same period. The change was primarily due to the fluctuation in adjusted EBITDA AL, discussed above, excluding the change in lease revenues.

EBITDA AL in 2022, included special factors of EUR -5.9 billion compared to EUR -2.6 billion in 2021. The change in special factors was primarily due to higher Merger-related costs, expenses related to the agreed sale of the Wireline Business, higher legal-related expenses (net of recoveries) including the settlement of certain litigation associated with the August 2021 cyberattack, and higher impairment expense due to the non-cash impairment of certain Wireline Business related right-of-use assets during 2022. The change in special factors is also impacted by other special items including certain severance, restructuring and other expenses and income, including gains from the sale of IP addresses, not directly attributable to the Sprint Merger. Special factors include Merger-related costs predominantly associated with the integration of Sprint and are comprised of integration costs to achieve efficiencies in network, retail, information technology and back office operations, migrate customers to the T-Mobile US' network and mitigate the impact of legal matters assumed as part of the Sprint Merger. In addition, Merger-related special factors include restructuring costs, including severance, store rationalization and network decommissioning as well as transaction costs, including legal and professional services related to the completion of transactions. Overall, EBITDA AL decreased by 2.0 percent to EUR 19.7 billion in 2022, compared to EUR 20.1 billion in 2021, primarily due to the factors described above, including special factors.

Profit/loss from operations (EBIT)

EBIT increased by 3.5 percent to EUR 7.5 billion in 2022, compared to EUR 7.2 billion in 2021. In U.S. dollars, EBIT decreased by 8.3 percent during the same period primarily due to lower EBITDA AL, partially offset by lower depreciation, amortization and impairment losses. In U.S. dollars, depreciation, amortization and impairment losses decreased 6.6 percent primarily due to lower depreciation expense on leased devices, resulting from a lower number of total customer devices under lease and certain 4G-related network assets becoming fully depreciated, including assets impacted by the decommissioning of the legacy Sprint CDMA and LTE networks and lower amortization expense on certain intangible assets acquired in the Sprint Merger. These decreases were partially offset by the non-cash impairments of certain wireline network assets in 2022 and higher depreciation expense (excluding leased devices) from the continued build-out of our nationwide 5G network.

Cash capex (before spectrum investment), cash capex

Cash capex (before spectrum investment) increased by 29.4 percent to EUR 13.4 billion in 2022, compared to EUR 10.3 billion in 2021. In U.S. dollars, cash capex (before spectrum investment) increased by 15.0 percent due to increase in purchases of property and equipment from the accelerated build-out of our nationwide 5G network, including from network integration related to the Sprint Merger.

Cash capex decreased by 12.1 percent to EUR 16.3 billion in 2022, compared to EUR 18.6 billion in 2021. In U.S. dollars, cash capex decreased by 21.3 percent primarily from a decrease in spectrum purchases, primarily due to USD 8.9 billion paid for spectrum licenses won at the conclusion of the C-band auction in March 2021, compared to USD 2.8 billion paid for spectrum licenses won at the conclusion of Auction 110 in February 2022 and USD 0.3 billion paid in total for spectrum licenses won at the conclusion of Auction 108 in September 2022. These decreases were partially offset by the fluctuation in cash capex (before spectrum investments) discussed above.

Europe

Customer development

thousands

		Dec. 31, 2022	Dec. 31, 2021	Change	Change %	Dec. 31, 2020
Europe, total^{a, b}	Mobile customers	47,336	45,816	1,520	3.3	45,619
	Contract customers	26,476	26,575	(99)	(0.4)	26,844
	Prepaid customers	20,860	19,241	1,619	8.4	18,775
	Fixed-network lines	7,907	7,802	105	1.3	9,084
	Broadband customers	6,689	6,381	308	4.8	6,939
	Television (IPTV, satellite, cable)	4,131	4,019	112	2.8	5,046
	Unbundled local loop lines (ULLs)/ wholesale PSTN	1,768	1,932	(164)	(8.5)	2,246
	Wholesale broadband lines	1,011	865	146	16.9	684
Greece	Mobile customers	7,323	7,045	278	3.9	6,914
	Fixed-network lines	2,622	2,624	(2)	(0.1)	2,589
	Broadband customers	2,359	2,306	53	2.3	2,185
Romania^a	Mobile customers	4,166	3,691	475	12.9	4,683
	Fixed-network lines	0	0	0	n.a.	1,444
	Broadband customers	0	0	0	n.a.	912
Hungary	Mobile customers	5,950	5,634	316	5.6	5,427
	Fixed-network lines	1,886	1,821	65	3.6	1,759
	Broadband customers	1,514	1,417	97	6.8	1,321
Poland	Mobile customers	12,512	11,542	970	8.4	11,198
	Fixed-network lines	30	29	1	3.4	31
	Broadband customers	154	77	77	100.0	32
Czech Republic	Mobile customers	6,423	6,297	126	2.0	6,178
	Fixed-network lines	704	645	59	9.1	606
	Broadband customers	430	391	39	10.0	363
Croatia	Mobile customers	2,305	2,276	29	1.3	2,253
	Fixed-network lines	868	875	(7)	(0.8)	885
	Broadband customers	648	633	15	2.4	625

^a The number of lines and customers in Romania decreased in the fourth quarter of 2021 due to the sale of Telekom Romania Communications, which operates the Romanian fixed-network business, effective September 30, 2021.

^b Since January 1, 2022, 921 thousand contract customers of a service provider in Austria are reported as wholesale customers and no longer as our own customers. The prior-year comparatives were not adjusted retrospectively.

^c "Other": national companies of North Macedonia, Montenegro, and the lines of the GTS Central Europe group in Romania.

thousands

		Dec. 31, 2022	Dec. 31, 2021	Change	Change %	Dec. 31, 2020
Slovakia	Mobile customers	2,446	2,502	(56)	(2.2)	2,441
	Fixed-network lines	856	880	(24)	(2.7)	865
	Broadband customers	643	633	10	1.6	607
Austria^b	Mobile customers	4,510	5,258	(748)	(14.2)	5,074
	Fixed-network lines	605	593	12	2.0	569
	Broadband customers	663	656	7	1.1	635
Other^c	Mobile customers	1,702	1,572	130	8.3	1,451
	Fixed-network lines	336	336	0	0	335
	Broadband customers	277	268	9	3.4	259

^a The number of lines and customers in Romania decreased in the fourth quarter of 2021 due to the sale of Telekom Romania Communications, which operates the Romanian fixed-network business, effective September 30, 2021.

^b Since January 1, 2022, 921 thousand contract customers of a service provider in Austria are reported as wholesale customers and no longer as our own customers. The prior-year comparatives were not adjusted retrospectively.

^c "Other": national companies of North Macedonia, Montenegro, and the lines of the GTS Central Europe group in Romania.

Total

In the Europe operating segment, almost all key performance indicators for customer development improved compared with the end of 2021, exceeding our expectations in some cases. Our convergent product portfolio, in particular, generated growth compared with year-end 2021 of 11.8 % in FMC customers thanks to ongoing demand. We are working flat out to build our fixed-network infrastructure with state-of-the-art optical fiber. The number of broadband customers has increased by 4.8 %. The mobile business also recorded an increase of 3.3 % in customer numbers. Our build-out of the 5G network is making good progress. Almost all of our national companies have already launched the commercial sale of 5G products and services.

Mobile communications

At the end of 2022, we had a total of 47.3 million mobile customers in the Europe operating segment; an increase of 3.3 % compared with the end of 2021. The number of contract customers decreased slightly by 0.4 %, largely as a result of the fact that we no longer include the SIM cards of a service provider in Austria in our customer base since January 1, 2022 but instead count them as wholesale customers. Without this effect, the number of contract customers increased by 3.2 %. By contrast, the contract customer base grew in almost all of our other national companies, but especially in Poland, Hungary, Romania, Greece, and the Czech Republic. Overall, contract customers accounted for 55.9 % of the total customer base. Our customers benefited from greater coverage with fast mobile broadband – a result of our integrated network strategy. The footprint countries of our operating segment are also making excellent headway with 5G. As of December 31, 2022, our national companies covered 47.4 % of the population (in particular in Greece, Montenegro, North Macedonia, Austria, and Croatia) with 5G.

The prepaid customer base recorded growth of 8.4 % compared with the end of 2021. Poland recorded a particularly strong increase, largely as a result of the prepaid SIM cards issued to many refugees from the war in Ukraine as part of a package of support. As part of our ordinary business activities, we offer our prepaid customers high-value contract plans with the resulting number of contract conversions also contributing positively to contract customer business.

Fixed network

The broadband business increased by 4.8 % compared with the end of 2021 to a total of 6.7 million customers. This growth is mainly driven by the national companies in Hungary, Poland, Greece, and the Czech Republic. By continuing to invest in optical fiber, we are systematically building out our fixed-network infrastructure. At the end of the reporting year, a total of around 8.1 million households (coverage of 32.0 %) were provided with the option by our national companies to subscribe to a direct connection to our fiber-optic network with speeds reaching up to 1 Gbit/s. The utilization rate remained stable at around 32 %. The number of fixed-network lines increased again slightly by 1.3 %, reaching 7.9 million as of December 31, 2022.

The TV and entertainment business had a total of 4.1 million customers in the 2022 reporting year, up by 2.8 % compared with the end of the prior year. This was attributable among other things to the acquisition of exclusive rights to broadcast sports events. With both telecommunications providers and OTT players offering TV services, the TV market is already saturated in many countries of our segment.

FMC – fixed-mobile convergence and digitalization

Our portfolio of convergent products, MagentaOne, was highly popular with consumers across all of our national companies. As of December 31, 2022, we had 7.0 million FMC customers; this corresponds to growth of 11.8 % compared with the end of the prior year. Our national companies in Hungary, Poland, Greece, Austria, and the Czech Republic in particular contributed to this growth. As of the end of the reporting year, FMC customers accounted for 60.6 % of the broadband customer base. We have also seen accelerated growth in the marketing of our MagentaOne Business product to business customers.

We continue to expand our digital interaction with customers, which means we can meet customer needs in a more personalized and efficient way, and position products and innovative services on the market more quickly. Around 67 % of our customers already use our service app.

Development of operations

millions of €					
	2022	2021	Change	Change %	2020
Net revenue	11,158	11,294	(136)	(1.2)	11,251
Greece	3,155	3,046	109	3.6	2,913
Romania	306	709	(403)	(56.8)	951
Hungary	1,715	1,750	(35)	(2.0)	1,716
Poland	1,413	1,421	(8)	(0.6)	1,446
Czech Republic	1,226	1,121	105	9.4	1,047
Croatia	905	908	(3)	(0.3)	917
Slovakia	806	787	19	2.4	772
Austria	1,391	1,346	45	3.3	1,296
Other ^a	320	301	19	6.3	283
Service revenue	9,279	9,578	(299)	(3.1)	9,577
EBITDA	4,296	4,390	(94)	(2.1)	4,153
Special factors affecting EBITDA	(31)	11	(42)	n.a.	(188)
EBITDA (adjusted for special factors)	4,327	4,380	(53)	(1.2)	4,341
EBITDA AL	3,933	4,018	(85)	(2.1)	3,722
Special factors affecting EBITDA AL	(31)	11	(42)	n.a.	(188)
EBITDA AL (adjusted for special factors)	3,964	4,007	(43)	(1.1)	3,910
Greece	1,310	1,265	45	3.6	1,199
Romania	38	147	(109)	(74.1)	153
Hungary	493	536	(43)	(8.0)	520
Poland	378	385	(7)	(1.8)	378
Czech Republic	503	471	32	6.8	430
Croatia	349	355	(6)	(1.7)	337
Slovakia	350	327	23	7.0	335
Austria	506	487	19	3.9	496
Other ^a	37	34	3	8.8	63
EBITDA AL margin (adjusted for special factors) %	35.5	35.5			34.8
Depreciation, amortization and impairment losses	(2,572)	(2,576)	4	0.2	(2,875)
Profit (loss) from operations (EBIT)	1,724	1,814	(90)	(5.0)	1,278
EBIT margin %	15.5	16.1			11.4
Cash capex	(1,872)	(1,905)	33	1.7	(2,216)
Cash capex (before spectrum investment)	(1,755)	(1,783)	28	1.6	(1,826)

The contributions of the national companies correspond to their respective unconsolidated financial statements and do not take consolidation effects at operating segment level into account.

^a "Other": national companies in North Macedonia, Montenegro, and the GTS Central Europe group in Romania, as well as the Europe Headquarters.

Net revenue, service revenue

Our Europe operating segment generated revenue of EUR 11.2 billion in the 2022 financial year, a slight year-on-year decrease of 1.2 %. In organic terms – i.e., adjusted for the sale of the Romanian fixed-network business on September 30, 2021, and assuming constant exchange rate effects – revenue increased by 3.9 % year-on-year. Service revenue declined year-on-year, but grew by 3.0 % in organic terms.

Organic revenue growth was largely driven by the strong performance of the mobile business, especially the increase in mobile service revenues with higher margins, due in part to increases in roaming and visitor revenues. Contract customer additions had positive effects on terminal equipment revenues. Service revenues also grew in the fixed-network business. Broadband and TV revenues increased on the back of the systematic build-out of our high-speed network infrastructure. Together with higher wholesale revenues, this increase offset the declines in voice telephony revenues, which were in line with expectations. The systems solutions business made a positive contribution to revenue overall. Regulatory interventions such as the reduction in termination rates had a negative impact on our organic development of revenue in the reporting period.

All countries apart from Romania contributed to the growth in revenue in organic terms, with our national companies in Hungary, the Czech Republic, Greece, and Austria recording the best relative development by country.

Revenue from **Consumers** increased in organic terms by 3.6 % year-on-year, due to the mobile business, where both service revenues and sales of mobile terminal equipment increased. In the fixed network, revenue from broadband and TV business increased thanks to our TV and entertainment offerings as well as the continuous fiber-optic build-out. This more than offset the decline in revenue from voice telephony. In addition, the higher number of FMC customers had a positive impact on revenue.

Revenues with **Business Customers** increased by 3.4 % compared with the prior year, with Greece, Austria, and Hungary contributing significantly to revenues in the core business of telecommunications, and Greece and the Czech Republic making a significant contribution to ICT revenues. Growth was recorded across all product areas. The number of mobile customers increased by 3.6 %, with almost all national companies contributing to growth, in particular Poland followed by Greece, Hungary, and Austria. Greece, Hungary, and the Czech Republic also recorded higher net mobile contract customer additions compared with the prior year. In the fixed-network business, the number of broadband customers rose by 4.4 %. Growth was recorded in particular in the segment of smaller business customers. Net customer additions were also up again year-on-year in the segment of medium-sized and larger corporate customers. ICT revenue rose sharply year-on-year, due to increases in both systems solutions and data communications. The digital infrastructure area developed positively as a result of the expansion of capacities and strong growth in the security business.

Adjusted EBITDA AL, EBITDA AL

Our Europe operating segment generated adjusted EBITDA AL of EUR 4.0 billion in the reporting year, a slight year-on-year decline of 1.1 %. In organic terms, adjusted EBITDA AL grew by 3.1 %, again making a significant positive contribution to earnings, with a positive net margin more than sufficient to offset the rise in indirect costs. This cost increase is in part a result of the supplementary telecommunication tax imposed by the Hungarian regulatory authorities in June 2022, which had an effect of EUR 61 million as of the end of 2022. Higher energy costs also had a negative impact on earnings.

Looking at the development by country, the increase in adjusted organic EBITDA AL was attributable to the positive trends at all of our national companies, but in particular in Greece, Slovakia, and Austria.

EBITDA AL decreased by 2.1 % year-on-year to EUR 3.9 billion. The expense arising from special factors was higher than in the prior year. In organic terms, EBITDA AL recorded modest growth of 1.4 %.

Development of operations in selected countries

Greece. In the reporting year, revenue in Greece increased by 3.6 % year-on-year to EUR 3.2 billion. The continued encouraging development in mobile business is mainly attributable to the addition of new contract customers. Visitor and roaming revenues also increased substantially thanks to travel returning to more normal levels. Our convergence products also performed well, with further customer additions and corresponding revenue. The ongoing fiber-optic and vectoring build-out, together with the resulting higher numbers of customers, continued to have a positive impact on the fixed-network business. Fixed-network revenues increased, mainly driven by strong growth in the broadband and TV business. Wholesale revenues also increased as a result of an increase in the volume of international calls on our networks. Systems solutions business recorded a substantial rise in revenue.

Adjusted EBITDA AL stood at EUR 1.3 billion, up 3.6 % year-on-year. In addition to a higher net margin, this positive trend was also supported by lower indirect costs, despite the increase in energy costs.

Hungary. Revenue in Hungary totaled EUR 1.7 billion in the 2022 financial year, declining by 2.0 % compared with the prior year due to substantial negative exchange rate effects. In organic terms, i.e., assuming constant exchange rates, revenue increased by 7.6 % year-on-year. The biggest driver of this increase was mobile business, mainly on account of significantly higher service revenues. In addition, contract customer additions had positive effects on terminal equipment business. Fixed-network revenue also increased year-on-year. We recorded higher service revenues in the broadband and TV business, both driven again by larger customer bases. Thanks to our increased investments in the build-out of fiber-optic lines, our offers have won over large numbers of customers. Our convergence products also continued to perform well, with further customer additions and corresponding revenue. Systems solutions business posted a slight decline in revenue.

Adjusted EBITDA AL stood at EUR 493 million, down 8.0 % year-on-year. In organic terms, adjusted EBITDA AL grew by 1.5 %. This growth was due in particular to significantly higher revenues, which more than offset the strong rise in costs driven mainly by the supplementary telecommunication tax imposed in June 2022.

Poland. Our revenue in Poland remained more or less stable in the reporting year at EUR 1.4 billion. In organic terms, revenue increased slightly by 2.0 %. Mobile revenue was up slightly, with contract customer additions also having a positive effect on terminal equipment business. In addition, higher roaming and visitor revenues offset the regulatory-induced reduction in termination rates. The number of FTTH customers in the fixed-network business also increased significantly, creating the basis for further broadband growth. This is reflected in higher broadband service revenues, and is also thanks to our successful partnership agreements on network infrastructure. Wholesale revenues were also negatively impacted by the regulatory-induced reduction in fixed-network termination rates. The number of FMC customers increased again substantially in 2022. This had a corresponding positive impact on revenues. Revenues in the systems solutions business declined.

Adjusted EBITDA AL remained more or less on a par with the prior-year level at EUR 378 million. In organic terms, adjusted EBITDA AL grew slightly by 0.6 %. The revenue-driven increase in the net margin was almost entirely offset by increases in indirect costs, in particular as a result of higher costs for energy and personnel costs.

Czech Republic. Revenue in the Czech Republic stood at EUR 1.2 billion in the reporting year, an increase of 9.4 % against the prior year. Excluding positive exchange rate effects, organic growth was 4.7 %. The realignment of our systems solutions business paid off: we recorded a substantial increase in revenue in this business area. The mobile business also grew, driven by higher service revenues and terminal equipment sales. However, mobile revenues were subject to a regulatory-induced reduction in termination rates. The fixed-network business also contributed to revenue growth. Thanks to our investments in the build-out of fiber-optic lines, our offers have won over large numbers of customers. Our convergence products recorded further customer additions and corresponding revenue growth.

Adjusted EBITDA AL increased by 6.8 % year-on-year to EUR 503 million. In organic terms, earnings grew by 2.3 % year-on-year, due to a revenue-related increase in the net margin. This was offset by higher indirect costs, primarily driven by increases in energy costs.

Austria. Revenue in Austria totaled EUR 1.4 billion in the 2022 financial year. This increase of 3.3 % was mainly attributable to growth in mobile revenues, with roaming and visitor revenues having a clearly positive impact. The regulatory-induced reduction in termination rates had a dampening effect on our mobile revenues. Service revenues in the fixed-network business developed encouragingly. The broadband business generated marked growth rates, due among other factors to a larger customer base and higher-value rate plans. Acceptance of our convergence products increased substantially again, also impacting positively on revenues.

Adjusted EBITDA AL increased by 3.9 % year-on-year to EUR 506 million. The higher revenues more than offset the rise in costs.

Profit/loss from operations (EBIT)

Our Europe operating segment recorded a decrease in EBIT of EUR 90 million in the reporting year. This was due to lower EBITDA, mainly owing to the sale of the Romanian fixed-network business in 2021. Depreciation, amortization and impairment losses were at the same level as a year earlier. An impairment loss of EUR 117 million recognized on non-current assets in the Romanian fixed-network business was offset by lower depreciation and amortization in our other national companies. Telekom Romania continues to operate in the structurally challenging and highly competitive Romanian market at prices that are low compared with other countries. In addition, high energy prices and sharp rises in interest rates had a negative impact on the enterprise value.

Cash capex (before spectrum investment), cash capex

In the 2022 financial year, the Europe operating segment reported cash capex of EUR 1.9 billion, down 1.7 % year-on-year. This decline is mainly due to the sale of the Romanian fixed-network business in 2021. We continue to invest in the provision of broadband and fiber-optic technology and in 5G as part of our integrated network strategy.

Systems Solutions

Order entry

millions of €					
	2022	2021	Change	Change %	2020 ^a
Order entry	3,952	3,876	76	2.0	4,564

^a Order entry for 2020 was not adjusted retrospectively in connection with the reassignment of the security business in 2022.

Development of business

The 2022 financial year continued to be dominated by the focusing of our systems solutions business on growth and future viability and the continuation of our transformation program. As communicated at the Capital Markets Day in May 2021, we have established four portfolio areas in line with market needs: Advisory, Cloud Services, Digital, and Security.

We have also defined selected industries (automotive, healthcare, public sector, and public transport), for which we have increased our offer of vertical solutions based on our expertise. In addition, we have agreed partnerships with leading cloud service providers (e.g., Amazon, Google, and Microsoft), so as to be able to offer our customers an even broader and more flexible range of cloud solutions.

By aligning ourselves in this way, our strategic goal is to become the leading IT service provider in the DACH region (Germany, Austria, Switzerland) and in other selected countries.

Order entry in our Systems Solutions operating segment was up by 2.0 % year-on-year in the 2022 financial year. This positive trend was in line with our expectations. Our focus industries, the public sector and healthcare, and the Germany region performed particularly well.

Development of operations

millions of €					
	2022	2021	Change	Change %	2020
Net revenue	3,811	3,759	52	1.4	3,911
Of which: external revenue	3,106	3,032	74	2.4	3,099
Service revenue^a	3,725	3,632	93	2.6	3,660
EBITDA	229	174	55	31.6	184
Special factors affecting EBITDA	(159)	(206)	47	22.8	(201)
EBITDA (adjusted for special factors)	388	380	8	2.1	384
EBITDA AL	125	65	60	92.3	68
Special factors affecting EBITDA AL	(159)	(206)	47	22.8	(201)
EBITDA AL (adjusted for special factors)	284	271	13	4.8	269
EBITDA AL margin (adjusted for special factors) %	7.5	7.2			6.9
Depreciation, amortization and impairment losses	(340)	(421)	81	19.2	(708)
Profit (loss) from operations (EBIT)	(110)	(247)	137	55.5	(524)
Special factors affecting EBIT	(270)	(384)	114	29.7	(567)
EBIT (adjusted for special factors)	160	138	22	15.9	43
EBIT margin (adjusted for special factors) %	4.2	3.7			1.1
Cash capex	(221)	(235)	14	6.0	(231)
Cash capex (before spectrum investment)	(221)	(235)	14	6.0	(231)

^a As of January 1, 2022, we extended our definition of service revenue in the Group, which increased this figure in the reporting period. The prior-year comparatives were not adjusted retrospectively.

Net revenue, service revenue

Revenue in our Systems Solutions operating segment in the 2022 financial year amounted to EUR 3.8 billion, up 1.4 % year-on-year, which slightly exceeded our expectations. This positive development was mainly driven by growth in the Digital Solutions (up 8.9 %), Road Charging (up 23.6 %), and Advisory (up 11.3 %) portfolio units, which more than offset the expected decline in traditional IT infrastructure business, due in part to deliberate business decisions such as the reduction in end-user services. In organic terms, revenue increased by 1.0 % year-on-year. External revenue increased by 2.4 %, mainly driven by the Digital Solutions portfolio unit. Service revenue also increased by 2.6 % due to the extension of the definition.

Adjusted EBITDA AL, EBITDA AL

In the 2022 financial year, adjusted EBITDA AL at our Systems Solutions operating segment increased by 4.8 % year-on-year to EUR 284 million, which was in line with our expectations. Efficiency effects from our transformation program and effects from increased revenue in our Digital Solutions and Road Charging portfolio units exceeded the decline in earnings in the traditional IT infrastructure business. In organic terms, adjusted EBITDA AL grew by 0.9 % year-on-year. EBITDA AL increased by EUR 60 million compared with the prior year to EUR 125 million. The expense arising from special factors was down EUR 47 million on the prior year at EUR -159 million, mainly due to lower restructuring costs and to a loss on deconsolidation in connection with the sale of a business operation in the prior year.

Profit/loss from operations (EBIT), adjusted EBIT

Adjusted EBIT in our Systems Solutions operating segment improved by EUR 22 million year-on-year in the 2022 financial year, coming in at EUR 160 million, due to the reasons described under adjusted EBITDA AL and as a result of declines in depreciation and amortization. EBIT increased by EUR 137 million compared with the prior year to EUR -110 million. The expense arising from special factors decreased by EUR 114 million year-on-year, to EUR -270 million, due in part to the reasons described under EBITDA AL. In addition, in the reporting year, non-cash impairment losses on non-current assets totaling EUR 111 million were recorded as special factors. These related to follow-up investments in connection with assets previously impaired in the 2020 and 2021 financial years. Furthermore, despite the business outlook remaining positive, the substantial increase in the cost of capital in the reporting year prompted further impairment losses to be recognized on non-current assets at the end of 2022. Impairment losses totaling EUR 178 million were recorded as special factors in the prior year.

Cash capex (before spectrum investment), cash capex

Cash capex in the Systems Solutions operating segment stood at EUR 221 million in 2022, slightly down on the prior-year level and hence still in line with our expectations.

Group Development

The sale of T-Mobile Netherlands was consummated on March 31, 2022. As such, T-Mobile Netherlands has not been part of the Group since April 1, 2022. The contributions for the first quarter of 2022 are still included in operational development due to the cumulative view.

For further information on the closing of the transaction, please refer to the section "[Group organization](#)" and to the section "[Changes in the composition of the Group and other transactions](#)" in the consolidated financial statements.

On July 13, 2022, Deutsche Telekom reached an agreement with DigitalBridge and Brookfield on the sale of a 51.0 % stake in GD Towers, comprising its tower assets in Germany and Austria, assigned to the Group Development operating segment. This transaction was consummated on February 1, 2023. The GD Towers business entity has been recognized in the consolidated financial statements as a discontinued operation since the third quarter of 2022. According to the management approach, however, we continue to include the contributions by GD Towers in the management-relevant financial performance indicators explained here.

For further information on the agreement with DigitalBridge and Brookfield on GD Towers, and the presentation of GD Towers according to the management approach, please refer to the sections "[Group organization](#)" and "[Management of the Group](#)."

Customer development

		Dec. 31, 2022	Dec. 31, 2021	Change	Change %	Dec. 31, 2020
thousands						
T-Mobile Netherlands	Mobile customers	0	6,939	(6,939)	(100.0)	6,803
	Fixed-network lines	0	739	(739)	(100.0)	682
	Broadband customers	0	728	(728)	(100.0)	668

Development of operations

millions of €

	2022	2021	Change	Change %	2020
Net revenue	1,708	3,165	(1,457)	(46.0)	2,883
Of which: T-Mobile Netherlands	536	2,071	(1,535)	(74.1)	1,946
Of which: GD Towers	1,154	1,112	42	3.8	989
Service revenue	411	1,621	(1,210)	(74.6)	1,468
EBITDA	2,106	1,790	316	17.7	1,343
Special factors affecting EBITDA	992	173	819	n.a.	(43)
EBITDA (adjusted for special factors)	1,113	1,618	(505)	(31.2)	1,386
Of which: T-Mobile Netherlands	201	757	(556)	(73.4)	639
Of which: GD Towers	943	894	49	5.5	786
EBITDA AL	1,956	1,479	477	32.3	1,058
Special factors affecting EBITDA AL	992	173	819	n.a.	(43)
EBITDA AL (adjusted for special factors)	964	1,307	(343)	(26.2)	1,101
Of which: T-Mobile Netherlands	190	668	(478)	(71.6)	554
Of which: GD Towers	804	669	135	20.2	587
EBITDA AL margin (adjusted for special factors) %	56.4	41.3			38.2
Depreciation, amortization and impairment losses	(195)	(706)	511	72.4	(780)
Profit (loss) from operations (EBIT)	1,911	1,084	827	76.3	562
Cash capex	(343)	(572)	229	40.0	(699)
Cash capex (before spectrum investment)	(343)	(572)	229	40.0	(499)

The contributions of T-Mobile Netherlands and GD Towers are shown excluding consolidation effects at operating segment level.

Net revenue, service revenue

Revenue in our Group Development operating segment decreased in the 2022 financial year by 46.0 % year-on-year to EUR 1.7 billion. In organic terms, revenue changed in the prior-year period due to the sale of T-Mobile Netherlands as of March 31, 2022 and increased by 6.5 % year-on-year. This increase resulted from the operational and structural growth of our GD Towers business entity, which includes the German and Austrian cell tower business. The positive trend is down to an increase in the number of sites we have in Germany and was further strengthened by the Austrian cell tower business. Service revenue also decreased substantially due to the sale of T-Mobile Netherlands. The GD Towers business does not generate any service revenues.

Adjusted EBITDA AL, EBITDA AL

Adjusted EBITDA AL decreased by 26.2 % to EUR 964 million. Here too, the decline was attributable to the sale of T-Mobile Netherlands. In organic terms, adjusted EBITDA AL grew by 26.4 %. The GD Towers business posted consistent growth on the back of a rising number of cell tower sites and was further strengthened by the Austrian cell tower business. An operational increase in adjusted EBITDA AL was also achieved through revenue growth. Adjusted EBITDA AL was positively impacted by the suspension of the amortization of right-of-use assets due to the fact that the GD Towers business entity has been held for sale since July 13, 2022. EBITDA AL was positively influenced by net special factors of EUR 992 million, which mainly related to the gains on deconsolidation due to the sale of T-Mobile Netherlands (EUR 0.9 billion) and the deconsolidation of DIV II (EUR 0.1 billion). EBITDA AL increased by EUR 477 million compared with the prior-year period to EUR 2.0 billion.

Profit/loss from operations (EBIT)

EBIT increased by EUR 0.8 billion year-on-year to EUR 1.9 billion, mainly as a result of the development described under EBITDA AL. Depreciation, amortization and impairment losses were down year-on-year, primarily in connection with the fact that T-Mobile Netherlands had been held for sale until it was sold, and, accordingly, the related depreciation and amortization had been suspended, and its subsequent sale. In addition, depreciation and amortization were suspended for the GD Towers business entity, which has been held for sale since July 13, 2022.

Cash capex (before spectrum investment), cash capex

Cash capex was significantly down on the prior-year level at EUR 343 million and hence slightly below our expectations. The reduction is mainly due to the sale of T-Mobile Netherlands and lower build-out investments made by GD Towers compared with the prior year.

Group Headquarters & Group Services

Development of operations

millions of €

	2022	2021	Change	Change %	2020
Net revenue	2,407	2,515	(108)	(4.3)	2,556
Service revenue	967	984	(17)	(1.7)	970
EBITDA	(361)	(300)	(61)	(20.3)	(350)
Special factors affecting EBITDA	(234)	(182)	(52)	(28.6)	(277)
EBITDA (adjusted for special factors)	(128)	(118)	(10)	(8.5)	(73)
EBITDA AL	(672)	(622)	(50)	(8.0)	(707)
Special factors affecting EBITDA AL	(234)	(182)	(52)	(28.6)	(277)
EBITDA AL (adjusted for special factors)	(437)	(440)	3	0.7	(429)
Depreciation, amortization and impairment losses	(1,476)	(1,463)	(13)	(0.9)	(1,304)
Profit (loss) from operations (EBIT)	(1,837)	(1,764)	(73)	(4.1)	(1,655)
Cash capex	(973)	(1,007)	34	3.4	(990)
Cash capex (before spectrum investment)	(973)	(1,007)	34	3.4	(990)

Net revenue, service revenue

Revenue in our Group Headquarters & Group Services segment decreased in the reporting year by 4.3 %, mainly as a result of lower intragroup revenues from land and buildings due to the ongoing optimized use of space as well as to lower intragroup service revenues at Deutsche Telekom IT from the licensing of the One.ERP system. The relocation of units previously assigned to the Germany operating segment in connection with the bundling of financial functions had an offsetting effect. Against this background, organic revenue decreased by 6.2 % compared with the prior year.

Adjusted EBITDA AL, EBITDA AL

Adjusted EBITDA AL at our Group Headquarters & Group Services segment amounted to EUR -437 million in the reporting year, which was up slightly against the prior-year level. The fall in revenues and increase in operating expenses relating to land and buildings as well as the decline in revenue from Deutsche Telekom IT were offset by income from the disposal of non-current assets in connection with the further optimization of our real estate portfolio.

Overall, negative net special factors of EUR 234 million affected EBITDA AL in the reporting period. Expenses for staff-related and non-staff-related restructuring measures were offset by the positive effect from the reduction in other provisions. This was due in particular to a measurement effect in connection with the obligation to make additional capital contributions for defined benefit obligations vis-à-vis former employees as a result of the increase in interest rates, and from the termination of legal proceedings. In the prior-year period, EBITDA AL had been negatively impacted by special factors amounting to EUR 182 million, especially for staff-related measures. Against this background, EBITDA AL decreased by EUR 50 million to EUR -672 million.

Profit/loss from operations (EBIT)

EBIT declined by EUR 73 million compared with the prior year to EUR -1,837 million, driven mainly by the higher negative special factors and the increase in depreciation, amortization and impairment losses, mainly due to shorter project runtimes at Deutsche Telekom IT and higher impairment losses on software used by the Systems Solutions operating segment. By contrast, depreciation, amortization and impairment losses from land and buildings decreased as a result of our continued optimization of the real estate portfolio.

Cash capex (before spectrum investment), cash capex

Cash capex decreased year-on-year by EUR 34 million, mainly due to lower investments at Group Headquarters and lower cash capex for vehicles. Higher investments in the Technology and Innovation unit had an offsetting effect.

Development of business at Deutsche Telekom AG

Deutsche Telekom AG prepares its annual financial statements in accordance with the principles of German GAAP, as specified in the German Commercial Code (Handelsgesetzbuch – HGB) and the German Stock Corporation Act (Aktiengesetz – AktG).

As the Headquarters of the Deutsche Telekom Group, we perform strategic and cross-segment management functions and provide services for other Group companies. The profits and losses of our subsidiaries and Group financing measures have a material effect on our financial position and results of operations. In the Germany operating segment, total revenue was up 1.9 % against the prior year. This increase was primarily driven by service revenues in the fixed-network and mobile business. Total revenue in the United States operating segment increased by 11.3 % year-on-year. In U.S. dollars, T-Mobile US' total revenue decreased slightly year-on-year. Total revenue was primarily impacted by lower equipment revenues, partially offset by higher service revenues. Total revenue in our Europe operating segment decreased by 1.2 % compared with the previous year. In organic terms, i.e., adjusted for the sale of the Romanian fixed-network business as of September 30, 2021 and assuming constant exchange rates, revenue increased by 3.9 % against the prior-year level. Organic growth was mainly driven by the strong performance of the mobile business. Total revenue in our Systems Solutions operating segment was up 1.4 % year-on-year. The positive revenue trend was attributable to growth particularly in the Digital Solutions (+8.9 %), Road Charging (+23.6 %), and Advisory (+11.3 %) portfolio units. This trend more than compensated for the expected decline in traditional IT infrastructure business, due in part to deliberate business decisions such as the reduction in end user services. Total revenue in our Group Development operating segment decreased by 46.0 % year-on-year as a consequence of the sale of T-Mobile Netherlands as of March 31, 2022. In organic terms, revenue increased by 6.5 % year-on-year.

Deutsche Telekom AG reported income after taxes for the 2022 financial year of EUR 4.0 billion. Alongside the operating business, the development of business was affected in particular by intragroup disposals of interests at fair value in the reporting year to create the target structure under company law for the sale of a 51.0 % stake in companies of the cell tower business in Germany and Austria to DigitalBridge and Brookfield, which was consummated on February 1, 2023.

Results of operations of Deutsche Telekom AG

Statement of income of Deutsche Telekom AG under German GAAP (total cost method)

millions of €

	2022	2021	Change	Change %	2020
Net revenue	2,250	2,538	(288)	(11.3)	2,740
Other own capitalized costs	9	9	0	0.0	9
Total operating performance	2,259	2,547	(288)	(11.3)	2,749
Other operating income	2,480	1,177	1,303	n.a.	4,725
Goods and services purchased	(456)	(481)	25	5.2	(471)
Personnel costs	(1,936)	(2,176)	240	11.0	(2,291)
Depreciation, amortization and write-downs	(277)	(288)	11	3.8	(211)
Other operating expenses	(2,919)	(2,485)	(434)	(17.5)	(2,834)
Operating results	(849)	(1,706)	857	50.2	1,667
Net financial income (expense)	5,700	5,606	94	1.7	1,245
Income taxes	(839)	(278)	(561)	n.a.	(380)
Income after income taxes	4,012	3,622	390	10.8	2,532
Other taxes	(18)	(17)	(1)	(5.9)	(17)
Income after taxes	3,994	3,605	389	10.8	2,515

Operating results improved from EUR -1.7 billion to EUR -0.8 billion, due mainly to a year-on-year increase in other operating income of EUR 1.3 billion and a EUR 0.2 billion decrease in personnel costs. In particular, an increase in other operating expenses of EUR 0.4 billion and a decline of EUR 0.3 billion in net revenue had an offsetting effect.

Lower intragroup cost transfers from hiring out employees and from renting and leasing out property were the main factors contributing to the reduction in net revenue of EUR 0.3 billion.

The year-on-year increase in other operating income of EUR 1.3 billion was mainly due to gains of EUR 0.6 billion on the intragroup disposal of shares in Erste DFMG Deutsche Funkturm Vermögens-GmbH, Bonn, and gains of EUR 0.5 billion arising from the buy-back of own shares by DFMG Holding GmbH, Bonn. The increase was also attributable to EUR 0.2 billion higher income from derivatives, mainly in connection with U.S. dollar contracts. In addition, an increase of EUR 0.2 billion in foreign currency translation gains had a positive effect. This increase is due in particular to effects from the maturity of cross-currency interest rate hedges.

The decrease in personnel costs of EUR 0.2 billion is largely attributable to a lower headcount due to the take-up of the early retirement program for civil servants and other staff restructuring measures.

The increase of EUR 0.4 billion in other operating expenses compared with the previous year resulted primarily from the EUR 0.3 billion increase in expenses from derivatives. Of this figure, EUR 0.2 billion is attributable to negative measurement effects from a forward transaction concluded to hedge the price of acquiring shares in T-Mobile US in the future. In addition, a EUR 0.1 billion increase in foreign currency translation losses on loans denominated in foreign currency had a negative impact on other operating expenses.

Net financial income increased slightly by EUR 0.1 billion to EUR 5.7 billion, due primarily to an increase of EUR 0.6 billion in income related to subsidiaries, associated and related companies. A EUR 0.3 billion increase in net interest expense and a write-down in the amount of EUR 0.2 billion on CTA Holding GmbH, Bonn, as a result of the impairment of this company's indirectly held investment in BT Group plc, London, United Kingdom, had an offsetting effect.

Income related to subsidiaries, associated and related companies of EUR 6.5 billion (2021: EUR 5.9 billion) was positively affected in the reporting year in particular by profits transferred by Telekom Deutschland GmbH, Bonn, of EUR 7.1 billion (2021: EUR 4.3 billion) and by other German companies of EUR 0.7 billion (2021: EUR 2.5 billion). The transfer of losses of EUR 1.4 billion (2021: EUR 1.2 billion), including EUR 0.9 billion (2021: EUR 0.7 billion) from Deutsche Telekom IT GmbH, Bonn, and EUR 0.4 billion (2021: EUR 0.2 billion) from T-Systems International GmbH, Frankfurt/Main, had an offsetting effect.

Income related to subsidiaries, associated and related companies was impacted in particular by the operating business of the consolidated subsidiaries. In addition, income of EUR 2.3 billion from the intragroup sale of shares in DFMG Deutsche Funkturm GmbH, Münster, and income of EUR 0.4 billion from the sale of 50.0 % of the shares in GlasfaserPlus Holding GmbH & Co. KG, Cologne, had an effect at Telekom Deutschland GmbH, Bonn, in the reporting year. In the previous year, income related to subsidiaries, associated and related companies had been positively impacted by the effect of a capital repayment by T-Mobile Global Holding GmbH, Bonn, to T-Mobile Global Zwischenholding GmbH, Bonn, in the amount of EUR 2.1 billion.

Net interest expense increased from EUR 0.3 billion to EUR 0.6 billion, due in particular to expenses arising from the negative trend in plan assets for pension obligations amounting to EUR 0.2 billion in the reporting year. In the previous year, by contrast, income of EUR 0.2 billion had been recognized in this context. A EUR 0.2 billion decline in expenses from interest added back to noncurrent pension accruals had a positive effect on net interest expense.

Income after income taxes was particularly impacted by the aforementioned effects and increased by EUR 0.4 billion year-on-year in the 2022 financial year.

Other tax expense of EUR 18 million combined with the aforementioned factors resulted in income after taxes of EUR 3,994 million in the 2022 financial year. Taking into account EUR 2,706 million in unappropriated net income carried forward, unappropriated net income totaled EUR 6,700 million.

Financial position of Deutsche Telekom AG

Balance sheet of Deutsche Telekom AG under German GAAP

millions of €

	Dec. 31, 2022	Dec. 31, 2022 %	Dec. 31, 2021	Change	Dec. 31, 2020
Assets					
Intangible assets	139	0.1	301	(162)	216
Property, plant and equipment	2,252	1.8	2,337	(85)	2,388
Financial assets	105,599	86.6	106,615	(1,016)	101,411
Noncurrent assets	107,990	88.5	109,253	(1,263)	104,015
Receivables	10,800	8.9	5,186	5,614	8,180
Other assets	2,689	2.2	1,556	1,133	964
Cash and cash equivalents	162	0.1	454	(292)	3,201
Current assets	13,651	11.2	7,196	6,455	12,345
Prepaid expenses and deferred charges	338	0.3	455	(117)	437
Difference between plan assets and corresponding liabilities	0	0.0	0	0	9
Total assets	121,979	100.0	116,904	5,075	116,806
Shareholders' equity and liabilities					
Capital stock and reserves	53,674	44.0	53,662	12	53,028
Unappropriated net income	6,700	5.5	5,888	812	5,129
Shareholders' equity	60,374	49.5	59,550	824	58,157
Accruals for pensions and similar obligations	4,010	3.3	3,898	112	3,960
Tax accruals	490	0.4	252	238	412
Other accruals	3,150	2.6	3,034	116	2,591
Accruals	7,650	6.3	7,184	466	6,963
Debt	12,619	10.3	10,175	2,444	10,952
Remaining liabilities	41,206	33.8	39,859	1,347	40,594
Liabilities	53,825	44.1	50,034	3,791	51,546
Deferred income	130	0.1	136	(6)	140
Total shareholders' equity and liabilities	121,979	100.0	116,904	5,075	116,806

In addition to shareholders' equity, our financial position is mainly determined by noncurrent assets as well as by receivables from and payables to Group companies. Loans recognized under financial assets as well as receivables from and payables to affiliated companies primarily resulted from financing relationships between Deutsche Telekom AG and its subsidiaries.

The balance sheet total increased by EUR 5.1 billion year-on-year to EUR 122.0 billion.

The development of total assets was attributable in particular to the increase of EUR 5.6 billion in receivables and the increase of EUR 1.1 billion in other assets. By contrast, financial assets decreased by EUR 1.0 billion and cash and cash equivalents by EUR 0.3 billion.

Financial assets decreased year-on-year by EUR 1.0 billion, mainly as a result of loan repayments by T-Mobile USA, Inc., Bellevue, in the amount of EUR 2.0 billion. The carrying amount was also reduced by the buy-back of own shares by DFMG Holding GmbH, Bonn, in the amount of EUR 0.5 billion and the sale of 89.9% of the shares in Erste DFMG Deutsche Funkturm Vermögens-GmbH, Bonn, to DFMG Holding GmbH, Bonn, in the amount of EUR 0.2 billion. The write-down in the amount of EUR 0.2 billion on CTA Holding GmbH, Bonn, further reduced the carrying amount. The acquisition of around 21.2 million shares of T-Mobile US, Inc., Bellevue, by SoftBank Group Corp., Tokyo, for a purchase price of EUR 2.2 billion had an increasing effect on financial assets.

The increase in receivables of EUR 5.6 billion year-on-year was primarily due to the EUR 5.4 billion increase in receivables from cash management resulting in particular from the intragroup purchase of shares by DFMG Holding GmbH, Bonn. The EUR 0.2 billion increase in financial receivables from affiliated companies, mainly as a result of short-term loans granted to OTE Plc., London, further increased receivables.

The increase of EUR 1.1 billion in other assets is primarily due to higher receivables from cash collateral paid in connection with derivative financial instruments. The change in receivables from collateral is mainly attributable to higher interest rates.

The development of total shareholders' equity and liabilities was mainly influenced by the increase of EUR 2.4 billion in financial liabilities, of EUR 1.3 billion in remaining liabilities, and of EUR 0.8 billion in shareholders' equity.

The increase in shareholders' equity of EUR 0.8 billion was primarily attributable to income after taxes of EUR 4.0 billion in the 2022 financial year. The dividend payment of EUR 3.2 billion for the previous year had an offsetting effect.

Financial liabilities increased by EUR 2.4 billion to EUR 12.6 billion compared to the prior year, due in particular to the increase in commercial paper issued in the amount of EUR 2.3 billion.

Remaining liabilities increased by a total of EUR 1.3 billion year-on-year. Current liabilities from cash management rose by EUR 6.2 billion as a result of payments received by subsidiaries that were transferred to Deutsche Telekom AG in connection with the intragroup cash management system. By contrast, financial liabilities to affiliated companies decreased due to loan repayments to Deutsche Telekom International Finance B.V., Maastricht, in the amount of EUR 3.0 billion. Furthermore, liabilities from collateral were down by EUR 1.5 billion against the prior year. This change is mainly attributable to higher interest rates.

Statement of cash flows of Deutsche Telekom AG under German GAAP

millions of €

	2022	2021	Change	2020
Income after taxes	3,994	3,605	389	2,515
Net cash provided by (used for) operating activities	4,753	8,673	(3,920)	(1,808)
Net cash provided by (used for) investing activities	1,614	(2,980)	4,594	11,587
Net cash (used for) provided by financing activities	(6,659)	(8,440)	1,781	(8,654)
Net change in cash and cash equivalents	(292)	(2,747)	2,455	1,125
Cash and cash equivalents, at the beginning of the year	454	3,201	(2,747)	2,076
Cash and cash equivalents, at the end of the year	162	454	(292)	3,201

Net cash provided by operating activities decreased year-on-year by EUR 3.9 billion to EUR 4.8 billion. In addition to income after taxes of EUR 4.0 billion, which includes profit/loss from control and profit/loss transfer agreements and other income related to subsidiaries, associated and related companies, this item was primarily affected by the increase of EUR 0.8 billion in net debt in connection with the intragroup cash management system. This increase in turn was due mainly to cash proceeds from Deutsche Telekom Europe B.V., Maastricht, resulting from the sale of the shares in T-Mobile Netherlands Holding B.V., The Hague. The funds drawn by DFMG Holding GmbH, Bonn, for the intragroup acquisition of own shares and the shares in Erste DFMG Deutsche Funkturm Vermögens-GmbH, Bonn, in particular had an offsetting effect. Net cash provided by/used for operating activities in the previous year had been impacted in particular by the rescheduling of current receivables from cash management to long-term loans at Telekom Deutschland GmbH, Bonn.

Net cash provided by/used for investing activities changed year-on-year by EUR 4.6 billion, resulting in net cash provided by investing activities of EUR 1.6 billion. This change was attributable in particular to cash inflows resulted from loan repayments by T-Mobile USA, Inc., Bellevue, of EUR 2.0 billion, from the buy-back of own shares by DFMG Holding GmbH, Bonn, of EUR 1.1 billion, from the sale of shares in Erste DFMG Deutsche Funkturm Vermögens-GmbH, Bonn, of EUR 0.7 billion, and from interest received of EUR 0.6 billion. Cash outflows of EUR 2.2 billion for the acquisition of further shares in T-Mobile US, Inc., Bellevue, and the increase in cash collateral of EUR 1.0 billion had an offsetting effect. In the previous year, loans granted to subsidiaries, in particular to Telekom Deutschland GmbH, Bonn, had mainly influenced the Company's investing activities.

Net cash used for financing activities decreased by EUR 1.8 billion year-on-year to EUR 6.7 billion. Net cash used for financing activities primarily resulted from the payment of the dividend for the 2021 financial year of EUR 3.2 billion, from net repayments of financial liabilities in the amount of EUR 2.3 billion, of which EUR 1.5 billion is attributable to collateral received, and from interest paid of EUR 1.2 billion.

In all, this resulted in a decrease in cash and cash equivalents of EUR 292 million in the reporting year.

Risk management in hedge accounting

We use derivatives to hedge interest rate and currency exposures as well as other price risks; i.e., exclusively for hedging purposes, not for speculative gains. In the process, we monitor the effectiveness of the hedges on a regular basis.

Combined non-financial statement

For our Chairman of Board of Management, Tim Höttges, sustainability is one of the Board's top priorities. At Deutsche Telekom's first Sustainability Day, which took place on October 12, 2022, in Bonn, the members of the Board of Management of Deutsche Telekom explained just how strongly sustainability is anchored in the Group's organization, and presented the latest sustainability strategy. They gave a clear view of where we are today in terms of Environmental, Social and Governance (ESG) issues, the goals we have set, and the challenges we face when addressing sustainability. They sent a strong message: Deutsche Telekom is Europe's leading telecommunications company in terms of market capitalization, revenue, and earnings. But we also want to be one of the leading telecommunications companies when it comes to sustainability.



We can only achieve this goal by working together with managers and employees. For this reason, alongside the achievement of financial key performance indicators (KPIs), we have also anchored ESG KPIs in our remuneration system for Board of Management members and managers. In addition, we promote and support active ESG commitments by our employees. At the event, Tim Höttges also praised the dedication of our Green Pioneers, likening them to a sustainability supervisory board within the Company.


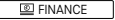
We have reached the first landmark on our journey to achieving what are, for us, ambitious climate goals: we already operate our networks using entirely green electricity. We still have further steps, both large and small, to take on the way to becoming fully climate neutral. The Board of Management announced, for example, that from 2023, there would be no more new company vehicles in Germany with combustion engines. This supports our interim goal for 2025 of climate neutrality in our own emissions (Scope 1 and 2). Another important step is to further decouple energy consumption from constantly increasing online data volumes, regardless of potential emissions. By 2024, we want to have doubled our energy efficiency in the Germany and Europe operating segments in comparison with 2020. In doing so, we are also doing our bit for the current energy situation in Europe.

A circular economy not only protects resources such as metal and rare minerals, but also has a direct impact on CO₂ emissions. We take responsibility for our actions and want to have a circular economy for network technology and devices in place in Europe by 2030. As part of this, we also take responsibility for the devices we sell to our customers. Lease or subscription models such as "device as a service" will play an important part in this. What is more, from 2025 onwards, almost all mobile devices marketed by Deutsche Telekom are to be sold in packaging that complies with our sustainability criteria. This is already the case for all of our new branded products throughout Europe.

According to a Bitkom study, 50 % of the CO₂ reductions necessary in Germany by 2030 can be enabled by digital technology. For us, this means integrating sustainability at the heart of our products. Many of our IoT solutions are already helping our customers to save energy, but IoT also has untapped potential – for example, it could play a role in establishing sustainable water management, or in making waste disposal more efficient.

"When people stop talking to each other, that is the moment when they stop understanding each other." These words from Tim Höttges clearly spell out the importance of the internet and its role in democracy. We want to promote sharing through digitalization. However, hate speech and fake news that spread quickly on the web pose a risk to our democracy. That's why we are campaigning for an online world that people can navigate with confidence and without having to fear marginalization. In 2022, we successfully continued our No Hate Speech campaign with a new campaign ad.

Recent years, which have been beset by challenges for us all, have shown that, when it comes to taking on social responsibility in times of crisis, we do our bit. The year 2022 was no different. At the very start of the war in Ukraine, our employees organized among themselves to support people in crisis. In addition, the Board of Management put together a comprehensive package of measures ranging from free SIM cards and job offers, through to support for aid organizations.

At the close of Sustainability Day, Mike Sievert, CEO of T-Mobile US, emphasized that we cannot be the best at connecting customers to their world without also taking on the challenge of making a positive impact on the world around us. The Board of Management was unanimous: ESG is a key strategic pillar of our work.

For further information on the Sustainability Day (including video stream), please refer to the topic special on our [website](#).

Creating transparency

We have been reporting on our corporate responsibility (CR) activities for more than 20 years: on our website, in our CR report, and in our annual report. Since the 2016 financial year, we have also explained how our core business contributes to achieving the UN Sustainable Development Goals (SDGs), which have been set as part of the 2030 Agenda.

| For further information, please refer to the section "[Sustainable Development Goals](#)."

Since the 2017 reporting year, we have published a non-financial statement (NFS) as part of the management report in accordance with § 315c in conjunction with § 289c to 289e HGB. In selecting the issues to be presented in the 2022 NFS, we took the statutory requirements into account. In addition, since the 2021 reporting year, we have fulfilled the obligatory reporting requirements regarding environmentally sustainable economic activities in accordance with Regulation (EU) 2020/852 of the European Parliament and of the Council of June 18, 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (hereinafter EU taxonomy): In the section "Aspect 1: Environmental concerns" we provide a breakdown of what percentage of our net revenue and also of our capital expenditure and operating expenditure for climate-related environmental objectives, for which criteria already exist in EU legislation, is taxonomy-eligible or taxonomy-aligned. The requirements for transparency in corporate sustainability are constantly increasing. To meet these requirements, we have followed the Global Reporting Initiative (GRI) standards for the concepts and the materiality analysis in this NFS, and our CR reporting additionally reflects other voluntary frameworks such as those of the Sustainability Accounting Standards Board (SASB) and the Task Force on Climate-related Financial Disclosures (TCFD). We also addressed the coming requirements of the Corporate Sustainability Reporting Directive (CSRD) in the reporting year, so that we can prepare our reporting for this in good time. [SDG 17](#) [RELATIONSHIPS](#)

| We will publish detailed information on this in our 2022 CR Report at the end of March 2023.

The Supervisory Board of Deutsche Telekom AG is responsible for the review of the content of the NFS. It did this with the support of Deloitte GmbH Wirtschaftsprüfungsgesellschaft (external auditor) in the form of a limited assurance engagement. The two non-financial performance indicators "energy consumption" and "CO₂ emissions" (Scope 1 and 2) are included as management-related performance indicators in the reasonable assurance engagement on Deutsche Telekom's consolidated financial statements and the combined management report. The NFS engagement is based on the International Standard on Assurance Engagements ISAE 3000 (revised). Unless otherwise stated, all disclosures in this NFS apply in equal measure to the Group and the parent company (combined non-financial statement). To avoid repetition within the management report, we refer to further information provided in other sections wherever relevant. References to disclosures not contained in the combined management report are provided as background information; these disclosures are not part of the NFS and thus are not covered by the engagement.

Our annual CR report supplements this NFS, meeting in full the requirements from a range of different stakeholders for substantiated accountability. The NFS is used by CR experts as an aid to rating Deutsche Telekom's sustainability performance. At the same time, we aim to engage stakeholders in our sustainability topics. For this reason, we have supplemented the CR report with interactive sustainability stories, serving the growing interest among the general public in sustainability issues. Some of the stories are also available in simplified German. [SDG 17](#) [RELATIONSHIPS](#)

During the reporting year, our 2020 CR Report was awarded first place in the independent cross-industry company ranking of the Institute for Ecological Economy Research (IÖW) and the future e.V. business initiative. We also attained second place for best sustainability communication in the NetFederation CSR benchmark ranking.

Sustainable Development Goals [SDG 17](#) [RELATIONSHIPS](#)

In 2015, the member states of the United Nations adopted 17 Sustainable Development Goals (SDGs). We want to make concrete contributions to achieving these goals along our entire value chain.



Our contributions to achieving the SDGs have also had a positive effect on our own Company. In order to highlight these contributions, we have divided them into five areas: Finance, Structure, Relationships, Employees, and Environment.

Deutsche Telekom's value contributions



FINANCE



STRUCTURE



RELATIONSHIPS



EMPLOYEES



ENVIRONMENT

As a responsible employer, we greatly value employee participation and a working environment that is fair and respectful; we encourage diversity and support our employees on their journey toward the digital working world. In this way, we contribute toward achieving SDGs 5 (Gender equality), 8 (Decent work and economic growth), and 10 (Reduced inequalities) – and this also has a positive impact on cooperation within our Company (Employees). By building out our broadband network, we are making an active contribution to creating high-quality infrastructure, promoting innovation (SDG 9), and strengthening our infrastructure (Structure). And by consistently improving energy efficiency as we expand our network and by sourcing 100 % of our electricity from renewable energies, we contribute toward SDG 13 and make our own business activities more environmentally friendly (Environment). Our growing range of sustainable products and solutions increases this effect and enables our customers to reduce CO₂ emissions and conserve other resources (SDGs 12, 14, 15). Our smart cities solutions also promote a sustainable way of life (SDG 11). At the same time, these offerings enable us to generate revenue (Finance). Our commitment to an internet free of hate and to more civil courage online contributes to a peaceful, inclusive society based on the rule of law (SDG 16) and is associated with new cooperation relationships (SDG 17) for us (Relationships).

To clearly highlight the contribution our products, services, and activities make toward the individual sustainability development goals and our value chain, we have marked the relevant passages with the respective SDG and value contribution symbols. The symbols used are considered information extraneous to management reports in accordance with the explanation given in the section [“Introductory remarks.”](#)

Explanation of the business model

We are one of the leading telecommunications companies worldwide. We offer our consumers fixed-network/broadband, mobile, internet, and internet-based TV products and services, as well as ICT solutions for our business and corporate customers.

For further information on our business model, please refer to the sections [“Group organization”](#) and [“Group strategy.”](#)

Strategic and organizational approach to sustainability 🌐 SDG 17 🤝 RELATIONSHIPS

We see ourselves as a responsible company and have made that a core element of our Group strategy. We are committed to implementing sustainability along our entire value chain – and to playing an important role in meeting today's environmental, economic, and social challenges. We are expressly committed to the principles of the United Nations Global Compact, the German Sustainability Code, and the Code of Responsible Conduct for Business. In addition, as already outlined, we support the United Nations Sustainable Development Goals.

We further refined our CR strategy in the reporting year, taking into account the results of the materiality analysis. We identified four key areas in which we want to act as a role model:

1. Our commitment to climate-neutral business practices
2. Our determined efforts to ensure the circularity of our products and services
3. Our pursuit of diversity, equity, and inclusion, as well as our investment into future skills
4. Our determination to help shape a digital society that is based on our fundamental democratic values and in which all people can participate safely, competently, and with autonomy

We also consider good governance to encompass an internal control system and a risk management system, including a compliance management system which is aligned with the company's risk situation. Maintaining data protection and security, engaging with the fundamental principles of digital responsibility, upholding human rights, shaping sustainable supply chains, investing capital based on ecological and social criteria, and ensuring communication about our environmental and social sustainability activities is transparent are additional meaningful aspects of good governance.

Our Board of Management bears overall responsibility for our CR goals, discussing and making decisions on key CR-related issues. The Group Corporate Responsibility (GCR) unit develops the Group-wide CR strategy, including the associated policies and guidelines. Its aim is to further develop our corporate culture, particularly in terms of sustainable innovation and social responsibility. As of January 1, 2022, GCR has been transferred from the Board of Management department for Human Resources and Legal Affairs into the department of the Chairman of the Board of Management. By taking this decision, the Supervisory Board and the Board of Management are emphasizing how seriously Deutsche Telekom takes its social and environmental responsibility. The different Group business units and segments are responsible for implementing the CR strategy. Specific measures are driven by the CR managers of each unit, who work together within the international CR Manager Network.

Our values and basic principles are anchored in our Guiding Principles, the Code of Conduct, the Code of Human Rights & Social Principles, and other subject-specific policies. The cornerstones of our sustainability management activities are formally set out in our CR Policy, which is binding for all Group units. To further shore up the implementation of our CR ambitions throughout the organization, we refined the CR Policy during the reporting year.

▮ We will publish detailed information on the CR Policy in our 2022 CR Report at the end of March 2023.

As part of our CR controlling and reporting activities, we record ESG data and performance indicators. We use this data primarily to calculate our ESG KPIs, which we use to measure and manage our CR performance. The non-financial performance indicators “energy consumption”, “CO₂ emissions” (Scope 1 and 2), and “energy intensity” are also elements of the Group’s higher-level controlling processes. Alongside the ESG KPIs, we also report other metrics with the aim of meeting all internal and external transparency requirements.

Growing numbers of investors take sustainability aspects into account in their investment decisions (Socially Responsible Investment, SRI). SRI investment products consist of securities from companies that have been reviewed based on environmental, social, and governance (ESG) criteria. The development of demand from socially responsible investors for the T-Share is an indicator we can use to assess our sustainability performance. The Socially Responsible Investment ESG KPI indicates the percentage of Deutsche Telekom AG shares held by such investors. We refined the methodology in the reporting year and have switched to monitoring sustainably managed shares at fund level and no longer at an institutional level. For better comparability with other companies, the total number of shares given pertains to the number of Deutsche Telekom shares in free float. Our commitment to greater sustainability is paying off: as of December 31, 2021, around 31.3 % of all T-Shares were held by investors who show concern for environmental, social, and governance criteria in their investment choices. 🏠 SDG 8 🏢 FINANCE

As part of our CR strategy, we have taken part successfully for many years in ESG ratings, which we select based on reputation, relevance, and independence. When rating agencies give high marks to our social and ecological commitment, the T-Share is included in the financial market’s sustainability indexes. In 2022, the T-Share was once again listed in all sustainability indexes relevant for us as a company.

Listing of the T-Share in sustainability indexes/ratings 🏠 SDG 8 🏢 FINANCE

Rating agency	Indexes/ratings/ranking	2022	2021	2020	2019	2018
S&P CSA	DJSI World	✓	✓	✓	✓	✓
	DJSI Europe	✓	✓	✓	✓	✓
	S&P ESG Index Series	✓	✓	✓	✓	—
CDP	STOXX Global Climate Change Leaders	✓	✓	✓	✓	✓
	Supplier Engagement A-List	○	✓	✓	✓	✓
MSCI	ESG Universal Indexes	✓	✓	✓	✓	✓
ISS-ESG	Prime Status (Sector Leader)	✓	✓	✓	✓	✓
Bloomberg	Gender Equality Index	✓	✓	✓	✓	✓
Sustainalytics	STOXX Global ESG Leaders ^a	✓	✓	✓	✓	✓
	UN Global Compact 100	✓	✓	✓	✓	✓
FTSE Financial Times Stock Exchange	FTSE4Good	✓	✓	✓	✓	✓
Moody's	Euronext indexes based on Moody's ESG data	✓	✓	✓	✓	✗

✓ Listed ✗ Not listed — Index did not yet exist in the relevant year ○ Result not available at the date of publication

^a Listed in other indexes in the relevant universe.

▮ We will publish detailed information on this in our 2022 CR Report at the end of March 2023.

Process for determining significant topics

For some two decades now, we have determined the topics that are relevant for our sustainability strategy and for our reporting on the basis of a materiality process that we are continually refining. In 2022, key factors influencing the refining of the process were changes to the requirements laid down in the GRI standards 2021 and the requirements stipulated in the CSRD, which will be relevant for our reporting as of the 2024 reporting year. However, since the CSRD will have the effect of changing the materiality criteria, we selected the topics for the present NFS based on the results of the 2021 materiality analysis, which we reviewed in the reporting year to ensure it was fully up to date. To review the key topics, we performed a document analysis in order to explore aspects such as existing legislation and the expectations of our stakeholders, for example, the capital markets. We then supplemented this with interviews with internal and external experts. In doing this, we considered both the negative and the positive impact of our business activities on the environment and on society along the value chain, and in a further step, we assessed our financial sustainability opportunities and risks. We then held an internal workshop to validate the results and to discuss potential strategic implications. This review process did not identify any new topics for the NFS in 2022. Consequently, there is no need to include further issues in the NFS for 2022. Although the two topics of “collaboration with employees’ representatives and trade unions” and “occupational health and safety” are not considered to be key topics, we continue to include them in our reporting. The key topic of “service quality” constitutes a central aspect of customer satisfaction.

For further information on customer satisfaction, please refer to the sections “[Group strategy](#)” and “[Management of the Group](#).”

The issues are assigned to the aspects as shown below and can be found in the corresponding sections of the NFS:

Aspect	Issue
1. Environmental concerns	<ul style="list-style-type: none"> – Climate protection – Resource conservation
2. Employee concerns	<ul style="list-style-type: none"> – Collaboration with employees’ representatives and trade unions – Diversity, equity, and inclusion – Occupational health and safety
3. Social concerns	<ul style="list-style-type: none"> – Network access and digital responsibility – Connect the unconnected – Data privacy and data security
4. Respecting human rights	<ul style="list-style-type: none"> – Labor standards in our own business area and at our suppliers
5. Fighting corruption	<ul style="list-style-type: none"> – Compliance management system

We will publish detailed information on the materiality process in our 2022 CR Report at the end of March 2023.

As part of our comprehensive risk and opportunity management system, we determine existing and potential risks and opportunities arising from environmental, economic, or social aspects, and from our corporate governance. As part of this process, we take into account the results of the financial assessment of the sustainability risks and opportunities in the materiality analysis. Topics such as climate protection, suppliers, and reputation involve potential risks, which we have outlined in the section “Risk and opportunity management.” We maintain this practice to provide the transparency our stakeholders expect, even if the risk assessment has found that these topics do not need to be rated as “very likely severe” in the meaning of § 289c (2) and (3) and § 315c HGB. The present NFS focuses on these risks and opportunities in relation to the relevant aspects.

For further information, please refer to the section “[Risk and opportunity management](#).”

Aspect 1: Environmental concerns

We are committed not only to minimizing the impact our business activities may have on the climate and the environment, but also to tapping into the opportunities for sustainable development offered by digitalization. If harnessed properly, these opportunities can contribute, among other things, to protecting resources and saving energy.

In order to establish uniform processes in the Company and to continually improve our environmental protection efforts, we use a comprehensive environmental management system that is part of the Group-wide integrated QHSE (quality, health, safety, and environment) management, and that is based on international standard ISO 14001. Our Group-wide environmental policy collates the key aspects of our voluntary commitments. In order to handle the rising tide of regulatory requirements, especially from the EU, we established an internal, cross-divisional Green Deal task force in 2020. The purpose of the task force is to ensure that necessary measures and processes can be implemented without delay and to create the necessary transparency. Correspondingly, evaluations and indications resulting from the task force’s activities are taken into account in the Group’s various sustainability initiatives.

Climate protection

Our investments in the network build-out make us one of the biggest investors in the industry. In 2022, we invested around EUR 21 billion Group-wide, primarily in building and operating networks to meet the growing demand for faster, full-coverage data services. However, the network build-out cannot be allowed to lead to an increase in CO₂ emissions and thus accelerate climate change. For this reason, we use energy from renewable sources to decouple CO₂ emissions from energy consumption. In Europe, we have set ourselves the goal of doubling the energy efficiency of our networks by 2024. Above and beyond this, we want to further increase energy efficiency – for instance at our data centers – and thus reduce energy consumption in the medium term despite the expected rise in data consumption (2024 against 2020, excluding T-Mobile US). The two non-financial performance indicators “energy consumption” and “CO₂ emissions” (Scope 1 and 2) were incorporated into the variable component of our Board of Management’s remuneration in 2021, and in 2022 were also made relevant for our executives (excluding T-Mobile US). In the United States, we are forging ahead with the highly intensive build-out of our 5G network, in particular in rural areas. This initially drives up power consumption. T-Mobile US, like the Group as a whole, has covered 100 % of its electricity requirements from renewable energy sources since 2021. There are strong fluctuations in T-Mobile US’ carbon footprint owing to unforeseeable natural disasters and the associated temporary use of equipment such as diesel generators to restore and back up damaged network infrastructure. Consideration must be given to the special national situation in this key market, which is why the decision was taken, in respect of short-term variable remuneration in 2023, not to include T-Mobile US in these two non-financial performance indicators. This step ensures that the right incentives are set for the Board of Management toward the sustainable development of the business, while safeguarding the stability of network operations at the same time. This applies equally to Board of Management managers and executives. The annual ambition for the performance indicators “energy consumption” and “CO₂ emissions” will continue to be set, managed, and reported for the entire Group as before, including a target value for T-Mobile US. In the reporting year, Group-wide energy consumption remained stable year-on-year at 13,253 GWh (prior year: 13,323 GWh). Due in particular to the Group-wide use of electricity from renewable energy sources, CO₂ emissions (Scope 1 and 2) are at a low level and dropped further as a result of our measures to 233 kt CO₂e (prior year: 247 kt CO₂e). The values given for total energy consumption and Scope 1 and Scope 2 emissions are based in part on estimates, assumptions, and extrapolations, and, in part, on data provided by our external energy service providers.

For about the last two decades, climate protection has been steadily increasing in importance at Deutsche Telekom. Our Group-wide climate protection strategy covers the following aspects: “Emissions from the value chain,” “Renewable energy sources,” “Energy efficiency,” and “Enablement: positive climate-protection effects on our customers.” In 2019, the Board of Management adopted climate goals, which it stepped up again in 2021:

- a. Since the end of 2021, we have been using electricity that comes from 100 % renewable sources everywhere in the Group (Scope 2, market-based method), which means we have achieved our goal.
- b. By the end of 2025, we aim to reach climate neutrality across the Company. We will cut up to 95 % of our CO₂ emissions (Scope 1 and 2) with the transition to electricity from renewable energy sources and other measures. We will need to offset the remaining emissions through compensatory measures.
- c. By 2030, we aim to reduce the emissions created by the manufacture and use of our products by 25 % per customer (compared to 2017) (Scope 3, categories: purchased goods and services, capital goods, use of sold products, use of leased products). These emissions account for more than 98 % of our carbon footprint. We maintain a close dialog with suppliers in order to reduce the emissions generated during production and to ensure that the products we offer consume less energy during the utilization phase.
- d. We want to have reached net zero by 2040 across all three scopes. Where there are CO₂ emissions that we cannot avoid by using renewable energy, improving energy efficiency, or agreeing climate targets with suppliers, for example, we will offset these using compensatory measures that mean they are permanently removed from the atmosphere, such as through natural sinks in which natural ecosystems absorb greenhouse gases from the atmosphere. This goal is in line with the targets set out by the European Green Digital Coalition, of which Deutsche Telekom is a founding member.

We developed our Group-wide climate goals in line with the current scientific and political conditions. The Science Based Targets initiative (SBTi) has confirmed to us that our climate protection targets contribute to compliance with the Paris Climate Agreement. Internal preparations were made during the reporting year for a fresh review of our current climate goals in line with the SBTi guidance. The review is to be completed in 2023. The SBTi also gave a positive assessment of the targets set by our subsidiaries in the United States and Hungary. The national companies are taking different steps to achieve these targets. These include power purchase agreements (PPAs) for procuring electricity from specific sustainable sources, such as wind and solar power. At the end of 2022, we were obtaining 27.7 % of our electricity through these PPAs (prior year: 23.1 %).

By 2025, we intend to increase this percentage in Europe to 50 % of our power consumption. Our aim is to actively support the sustainable production of green energy.

We calculate our CO₂ emissions across the Group in line with the Greenhouse Gas (GHG) protocol. The market-based method is used for Scope 2 emissions. The standard distinguishes between three categories of CO₂ emissions (Scope 1, 2, and 3). The following graphic visualizes the emissions of the different scopes resulting from our business activities, shown as CO₂-equivalent emissions (CO₂e emissions).

CO₂e emissions (Scope 1–3)

Deutsche Telekom Group in 2022 in % and kilotons (kt) of CO₂e



- **Scope 3 emissions from upstream activities:**
Upstream transportation and distribution, purchased goods and services, capital goods, waste generated in operations, fuel- and energy-related activities, business travel, and employee commuting
- **Scope 1 emissions from Deutsche Telekom's own activities:**
Primary energy requirements for operation of Deutsche Telekom's systems, buildings, and vehicles
- 🔗 **Scope 2 emissions from energy procured:**
Generation of electricity and district heating/cooling procured by Deutsche Telekom. Renewable energy certificates are taken into account when Scope 2 emissions are determined.
- 🔗 **Scope 3 emissions from downstream activities:**
Transportation of products sold to the customer, use of sold or leased products, and disposal and recycling of sold products. Some 2.6 million metric tons of CO₂e are additionally generated during the utilization phase of our solutions by devices that our customers purchase from third parties and not from Deutsche Telekom. As we have only a negligible influence on these devices and hence on their energy consumption and emissions, from this reporting year we report these emissions separately.

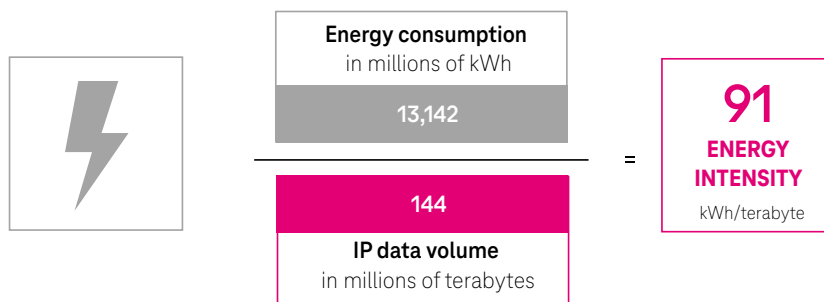
📌 We will publish detailed information on the year-on-year development of data in our 2022 CR Report at the end of March 2023.

Another important metric for us is the Renewable Energy KPI. It shows how much of our Company's overall electricity consumption is obtained from renewable energy sources. In 2022, this amounted to 100 % across the Group. Direct procurement, guarantees of origin, and own energy production are included in this calculation.

The Power Usage Effectiveness (PUE) metric serves as one indicator for the efficiency enhancement in our data centers. We determine this metric using the method recommended by the standard DIN EN 50600 for data centers, which takes the total energy consumed by data centers into account, not just that used to operate the servers. In 2022, the global PUE metric for our T-Systems data centers was 1.59 (prior year: 1.58). Our most-efficient highly available data center has a PUE of 1.30. We determine the effectiveness of our climate protection measures using key performance indicators (KPIs). The KPI for Energy Intensity for Deutsche Telekom (fixed-network and mobile entities) is shown in the following graphic. The KPI reflects our energy consumption in relation to the volume of data transmitted, thus demonstrating how our network's energy efficiency has developed in practice. The result stands at 91 (prior year: 102). Effective the reporting year, we no longer report the Carbon Intensity ESG KPI due to consistently low CO₂ emission levels (Scope 1 and 2), which diminished the usefulness of this KPI compared to previous years.

Energy Intensity ESG KPI

Deutsche Telekom Group (fixed-network and mobile entities) in 2022



We are also applying our climate protection efforts to our mobility: Our goal within the Group is to progressively increase the proportion of electric vehicles in our fleet in order to have fully electric mobility in place as soon as possible. We are committed to buying only electric company vehicles in Germany from 2023 onward, for example. As soon as charging infrastructure provides full coverage and sufficient suitable electric vehicles are available, we will also be able to implement full e-mobility in our service vehicles. Currently, around 35 % of new company vehicles ordered in Germany are electric (prior year: 30 %). In addition, our subsidiary Comfort Charge provides e-mobility charging infrastructure in Germany. Comfort Charge currently offers 161 rapid charging stations, and this is set to increase to more than 250 by the end of 2023. Both our own fleet and third-party vehicles can use the vehicle charging stations.

In order to effectively curb climate change, many relevant players must work together, which is why we participate in national and international associations and organizations, such as the Global Enabling Sustainability Initiative (GeSI) and econsense. We are also working systematically on improving climate protection throughout our supply chain. Since 2016, the CDP supplier engagement rating has assessed how well companies have integrated the topic of climate protection into their supply chains. In 2021, we were awarded an A rating by CDP and included on its Supplier Engagement Rating Leader Board. The supplier engagement rating had not yet been confirmed for the reporting year at the time of the publication of this report. Our CDP Supply Chain Coverage ESG KPI indicates the degree to which our procurement volume was covered by our suppliers' participation in the CDP Supply Chain Program in 2022. A total of over 52 % (prior year: over 70 %) of the procurement volume was covered in 2022 (excluding T-Mobile US). In the reporting year, 247 suppliers took part in the program (prior year: 268).

Resource conservation

Our goal is to make our product portfolio increasingly sustainable. To achieve this, we take a holistic approach to resource conservation and are committed to the responsible use of resources along our entire value chain. We aim to make products and materials as durable as possible and to ensure they are always recycled at the end of their lifetimes. Also, by providing innovative, network-based solutions, we support our customers in reducing their own CO₂ emissions and contributing to climate protection.

Sustainable products are a key factor in competition for us. Using the Sustainable Revenue Share ESG KPI, we determine how much revenue we (excluding T-Mobile US) generate from products that make a contribution to sustainability. Revenues for individual product clusters are partially determined using a percentage allocation based on assumptions. In 2022, this share amounted to just over 42 % (prior year: 42 %). We have recorded this indicator since 2014 using our own methodology, which we adapted in 2022. As previously, a product can only be assigned to the sustainable product portfolio provided it is highly likely that the product does not entail any of the seven risks defined in our methodology. Additionally, a product must also offer at least one of five of the sustainability benefits that we updated in the reporting year (or one of six benefits up to 2021). Effective the reporting year, we no longer include the use of renewable energies as a sustainability benefit. Cost savings are still considered as additional information. However, a cost benefit does not constitute a sustainability benefit in and of itself. Under the new assessment methodology, the prior-year figure changes to EUR 16.2 billion. Owing to the fact that the EU taxonomy does not cover the major part of our business model at present, we are reporting this KPI in parallel in the current reporting year.

| We will publish detailed information on the Sustainable Revenue Share ESG KPI in our 2022 CR Report at the end of March 2023.

The return, repair, and recycling of old devices should be a matter of course. By 2030, we want all of our products to be recycled at the end of their lifetimes. We also want our suppliers to make their devices and network technology fully circular by 2030. We work closely with manufacturers to be able to offer an increasingly sustainable product range. In Germany and Austria, for example, we stepped up our strategic collaboration with Fairphone – a manufacturer specializing in sustainable smartphones – in the reporting year. In 2021, we introduced the Eco Rating methodology, in cooperation with four other European mobile communications operators. By now, nine network operators are using this rating methodology in 36 countries. More than 250 cell phones from 19 vendors were evaluated by the end of 2022 in terms of their environmental impact throughout their entire life cycle. In this way, we can help our customers make more sustainable purchase decisions and motivate vendors to reduce the environmental footprint of their devices. We are also pursuing our goals in our packaging. Since mid-2022, all new branded products launched in Europe must meet the sustainability criteria laid down in our new packaging guideline. More than two-thirds of the new packaging for smartphones we source from our suppliers also meets these criteria.

To indicate the sustainability benefits of our products to our customers, we make suitable products identifiable with recognized environmental labels. For example, several routers and mesh devices are certified with the Green Product environmental label of the TÜV Rheinland testing service provider. In addition, Telekom Deutschland's fixed-network telephones to a large part carry the Blue Angel seal of approval. The Blue Angel was also awarded to the joint system of Telekom Deutschland and the service provider Teqcycle Solutions for taking back cell phones. We use our #GreenMagenta and #GoodMagenta labels for those of our products and initiatives that bring sustainability benefits. #GreenMagenta encompasses Deutsche Telekom products, services, projects, actions, and initiatives that make a particularly positive contribution to climate protection and the more responsible use of resources. #GoodMagenta describes projects, actions, and initiatives that make a positive contribution to overcoming social challenges in the digital world. We have set out strict rules for awarding these two labels. There must be proven sustainability benefits. A comprehensive impact assessment is carried out in order to award the #GreenMagenta label, for example. If there are clear disadvantages for society or the environment, #GreenMagenta or #GoodMagenta will not be awarded, despite any potential advantages. More than 35 products from Germany and European national companies, such as Magenta Telekom in Austria and Makedonski Telekom in North Macedonia, have already been awarded the labels. For example, we have labeled our green network in Germany, which has been operated with electricity from 100 % renewable energy sources since 2021, with #GreenMagenta, while our Speedport Smart 4 router, with a case made from 90 % recycled plastic and with plastic-free packaging, also bears the label.  

| We will publish detailed information on this in our 2022 CR Report at the end of March 2023.

Conserving valuable resources is also a goal of the Green Pioneers initiative launched by our employees. More than 330 employees from around 70 locations in Germany have joined the initiative thus far. Our Green Pioneers raise awareness among the workforce of resource efficiency in the workplace and also provide inspiration for our core business. In 2022, some Green Pioneers held courses on environmental issues for their colleagues, with more than 1,900 employees in total taking part. As part of Green Action Month, they planted what had been a lawn with a 40 square meter mini-forest, using native plants, trees, and shrubs to offer the greatest possible biodiversity in the smallest area. The Cycling to Work project helps protect the climate and save carbon emissions. The Green Pioneers were also behind the successful installation of e-bike charging stations at several sites. At international level, the CR managers in the national companies also launched relevant local activities. For example, to mark Earth Day, Deutsche Telekom IT Solutions Slovakia carried out a range of activities including a plant exchange, training courses, and workshops on waste reduction and recycling for employees and their children, as well as other volunteer-run activities. 🌱 SDG 13 👥 EMPLOYEES

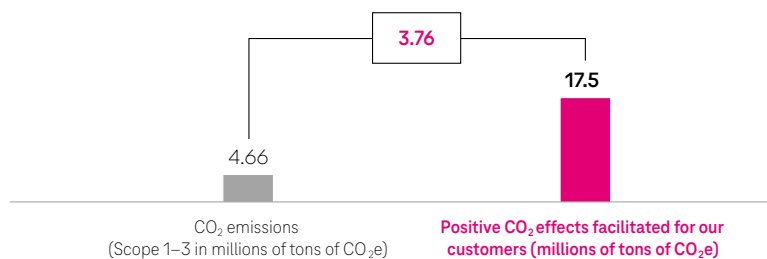
Environmental opportunities arising from the digital transformation

We can use our products, services, and activities to contribute to tackling many environmental and social challenges, as was made clear in a comparison with the 17 sustainability goals (SDGs) adopted by the United Nations. For instance, ICT solutions can help reduce resource consumption in agriculture and increase harvests, shape cities and mobility up for the future in terms of sustainability, stabilize power supply grids, or improve access to education and medical care – areas of application that offer market opportunities for our Company. In order to evaluate the concepts described in this NFS, it is important to also look to the opportunities digitalization opens up for sustainable development. 🌐 SDG 17 🏠 FINANCE

We use the Enablement Factor to measure our overall performance with regard to climate protection. For this ESG KPI, we calculate the positive CO₂ effects facilitated for our customers through using selected products. Relevant emissions generated by customers are generally taken into account, with the exception of emissions caused by operating video-conferencing facilities. Rebound effects are taken into account based on studies and estimates by experts, where it is possible to do so with reasonable effort. We put this figure in relation to our own CO₂ emissions. According to this figure, the positive CO₂ effects facilitated for our customers in Germany were 276 % higher in 2022 than our own CO₂ emissions (enablement factor of 3.76 to 1). The decline against the prior year (enablement factor of 4.8 to 1) is due to the use of more differentiated data collection methods, as well as a reduction in the number of people using our video conferencing solutions. The usefulness of the KPI depends very much on the underlying assumptions. 🌱 SDG 9 🌍 ENVIRONMENT

Enablement Factor ESG KPI

Deutsche Telekom Group in Germany in 2022



We will publish detailed information on the topic of Corporate Digital Responsibility in our 2022 CR Report at the end of March 2023.

Compliance with the EU taxonomy transparency requirements 🌱 SDG 13 🏠 FINANCE

The EU taxonomy aims to promote investment flows from the finance sector to businesses that are involved in environmentally sustainable activities. It is thus intended to help the EU implement the European Green Deal, while, at the same time, creating a common understanding of the environmental sustainability of activities and investments. The Regulation also lays down corporate reporting obligations in regard to these economic activities. Criteria were set out in EU legislation in 2021 for the first environmental objectives of the taxonomy “Climate change mitigation” and “Climate change adaptation.” July 2022 saw the addition of further criteria for specific forms of energy generation.

Under the Taxonomy Regulation, the first step is to ascertain the taxonomy-eligible economic activities of a company. These are activities that are covered by the EU taxonomy and that therefore potentially contribute significantly to achieving the environmental objectives. The second step is to check whether these activities are taxonomy-aligned. An activity is considered taxonomy-aligned if it meets the technical screening criteria listed in Annexes I and II of Delegated Regulation (EU) 2021/2139 to qualify as contributing substantially to at least one environmental objective, does not cause significant harm to any of the other environmental objectives, and complies with the minimum social standards (minimum safeguards) stipulated in the Taxonomy Regulation (EU) 2020/852 in regard in particular to respecting human rights and complying with labor law.

As Deutsche Telekom belongs to the information and telecommunications industry, two of the economic activities currently listed in the EU taxonomy are relevant for the environmental objective “Climate change mitigation” (taxonomy-eligible) in respect of its core business:

- Data processing, hosting and related activities (8.1)
- Data-driven solutions for GHG emissions reductions (8.2)

As we provide charging infrastructure for electric vehicles through our subsidiary Comfort Charge, the following additional economic activity, which is pertinent to the environmental objective “Climate change mitigation,” is taxonomy-eligible:

- Infrastructure enabling low-carbon road transport and public transport (6.15)

No economic activities relevant to the environmental objective “Climate change adaptation” were identified in the 2022 financial year.

The EU taxonomy does not currently include criteria for the economic activity “Provision and operation of a network infrastructure for telecommunications.” The bulk of our business model is therefore not yet included in the taxonomy, which means that we cannot describe most of our core business as taxonomy-eligible. The EU taxonomy thus offers no way to illustrate our contribution to climate change mitigation in respect of our network infrastructure. We therefore lobby in a range of business and industry associations for the inclusion of suitable, relevant criteria in the EU taxonomy to describe our core activities.

On the other hand, the EU taxonomy does provide a list of cross-cutting activities outside of our core business that are relevant for our general corporate infrastructure, such as fleet and facilities management. The following cross-cutting activity for the environmental objective “Climate change mitigation” is relevant for Deutsche Telekom (taxonomy-eligible):

- Transport by motorbikes, passenger cars, and light commercial vehicles (6.5)

The three tables below provide an overview of our taxonomy-aligned economic activities for the reporting year. They break the figures down into both absolute values and the applicable percentage of Group turnover, capital expenditure, and operating expenditure.

Method for ascertaining taxonomy eligibility and alignment

When ascertaining the taxonomy-eligibility of economic activities, we focused on our core business activities taking cost-benefit aspects into account.

Those activities identified as taxonomy-eligible were checked individually for their taxonomy alignment. As we manage climate risks centrally at Group level, determining whether an activity causes no significant harm to the environmental objective “Climate change adaptation” took place at a higher level for all taxonomy-eligible activities. The sole exceptions to this are the United States operating segment and our national companies in Greece and Hungary, where the management of climate risks is still under development and does not yet fully conform with the EU taxonomy requirements. We therefore report taxonomy-eligible activities that are allocable to the United States operating segment and our national companies in Greece and Hungary as non-taxonomy-aligned for the reporting year. We ensure compliance with minimum social safeguards using a Group-wide management system.

To avoid significant harm to the environmental objective “Climate change adaptation,” checking for taxonomy alignment of all of the economic activities listed above requires an analysis of potential physical climate risks. As part of our security and risk management, we regularly examine our critical infrastructure to check for physical climate risks and take climate adaptation measures to minimize potential risks. The climate risk analysis is carried out using a recognized software platform based on the climate scenarios defined by the Intergovernmental Panel on Climate Change (IPCC). No material climate risks as defined in the taxonomy requirements were identified in connection with the taxonomy-eligible activities.

The minimum social safeguards require a management system to ensure compliance with the OECD Guidelines for Multinational Enterprises and the UN Guiding Principles on Business and Human Rights, including the ILO Core Conventions and the International Bill of Human Rights. We have made an express commitment to the principles listed above, and we perform human rights due diligence using a risk-based management system encompassing both the Group and our supply chain that we use to monitor compliance with social and environmental standards. We also maintain a process of trust-based dialog with employees’ representatives and trade unions. To prevent corruption and to safeguard fair competition, Deutsche Telekom has a compliance management system which is aligned with the Company’s risk situation.

For further information on minimum social standards, please refer to the sections “[Collaboration with employees’ representatives and trade unions](#),” “[Connect the unconnected](#),” “[Labor standards in our own business area and at our suppliers](#),” and “[Compliance management system](#),” and to the 2022 CR Report, which will be published at the end of March 2023.

Economic activities that are relevant to turnover

The taxonomy-eligible economic activity **Data processing, hosting and related activities (8.1)** covers “Storage, manipulation, management, movement, control, display, switching, interchange, transmission or processing of data through data centers, including edge computing.” Of our Group-wide business activities, our Systems Solutions operating segment (T-Systems) comes under this sector. When evaluating the taxonomy eligibility of activities, we primarily take T-Systems’ global business into account. As well as data centers operated by T-Systems, we also included data centers operated on co-locations in the evaluation.

To ensure the data centers make a substantial contribution to climate change mitigation in accordance with the EU taxonomy, they must comply with the EU Code of Conduct on Data Centre Energy Efficiency. Five of the eight sites operated directly by T-Systems comply with this Code of Conduct. As we have not yet verified compliance with the Code of Conduct through external audits in accordance with EU taxonomy requirements, we are not classifying the data centers used for economic activity 8.1 as taxonomy-aligned in the reporting year. In addition, in accordance with the EU taxonomy the global warming potential of refrigerants that need to be used in data center cooling systems may not exceed a value of 675. This criterion is currently met by one data center that was fully refurbished in 2022. The other sites currently still use industry-typical refrigerants that meet the criteria of the EU directive on fluorinated greenhouse gases. We will make the change to taxonomy-aligned refrigerants as part of the regular refurbishment program for our data centers. We will carry out a detailed review of the individual data centers’ compliance with the criteria for preventing significant harm to the remaining environmental objectives in each case as soon as they fulfill the aforementioned climate change mitigation requirements in full.

We associate those solutions and products in the Group that, in accordance with the description in the EU taxonomy, are “predominantly aimed at the provision of data and analytics enabling GHG emission reductions” with the economic activity **Data-driven solutions for GHG emissions reductions (8.2)**. These are solutions and products that have clear potential to enable users to save CO₂ emissions. When selecting them, we take into account solutions and products that are incorporated into our Enablement Factor and Sustainable Revenue Share ESG KPIs, and/or that have been awarded our #GreenMagenta label. We thus identified the following taxonomy-eligible services within our Group-wide business activities:

- Business-related video conferences (saves travel-induced CO₂ emissions)
- Workplace and cloud solutions (increases energy efficiency by improving server utilization)
- IoT solutions (saves CO₂ emissions through, for example, efficient light switching)

We provide these services to a significant financial extent in the Germany operating segment, in our major subsidiaries in the Europe operating segment, and in the Systems Solutions operating segment.

The technical screening criteria require a life-cycle analysis as evidence of the taxonomy alignment of the solutions in question. These must show that a solution results in substantial greenhouse gas emission reductions both over and beyond its entire life cycle in comparison with the relevant reference solution available on the market. We understand reference solutions to be alternative solutions that would typically be used in a company in our footprint markets. This assumes that the companies are aligned with best practices. The technical screening criteria do not stipulate a specific threshold for “substantial” reductions in greenhouse gases in comparison with the reference solution. As there are differences in the technologies of the various taxonomy-eligible solutions, we have reviewed each solution separately to determine the point from which greenhouse gas savings can be considered “substantial” in accordance with scientific findings. The requisite life-cycle analyses have been prepared for business-related web conferencing solutions and for the cloud solutions Future Cloud Infrastructure, Open Telekom Cloud, and SAP Cloud Services. To date, we have not prepared a life-cycle analysis for the IoT solutions and therefore we do not report them as taxonomy-aligned for the reporting year.

By comparing in-person meetings with taxonomy-eligible business-related web conferencing solutions included in the analysis, evidence of significant greenhouse gas reductions was provided. For instance, hybrid meetings reduce greenhouse gas emissions by around 28 % (small meetings) or 37 % (large meetings).

Of the workplace and cloud solutions covered by the life-cycle analysis, Future Cloud Infrastructure reduced greenhouse gas emissions by around 16 % through the use of decentralized data centers operated by our customers themselves. The life-cycle analysis also found that using the Open Telekom Cloud or SAP Cloud Services reduced greenhouse gas emissions by 50 % compared with the reference scenario. This scenario is based on the assumption that our customers use their own, decentralized server infrastructure for storing and processing data rather than the cloud solution. We therefore classify all web conferencing, workplace and cloud solutions included in a life-cycle analysis as taxonomy-aligned.

For the aforementioned solutions, we exclusively use infrastructure located in Germany. The requirements for the “Transition to a circular economy” conform to current EU legislation, which we enforce as part of our environment management activities at our EU sites. The economic activity **Infrastructure enabling low-carbon road transport and public transport (6.15)** covers the construction, modernization, maintenance, and operation of such infrastructure, which also includes electric vehicle charging stations. Comfort Charge’s charging solutions encompass the installation, operation, and maintenance of charging infrastructure for electric vehicles. In addition to e-charging infrastructure operated on publicly accessible Deutsche Telekom sites, this also includes services related to the planning, construction, and maintenance of e-charging facilities at our customers’ premises. This means that both of the business areas of Comfort Charge can be assigned to this taxonomy-eligible activity. According to the technical screening criteria, electric vehicle charging stations alone make a substantial contribution to the environmental objective “Climate change mitigation.” Significant harm to the environmental objectives “The sustainable use and protection of water and marine Resources” and “The protection and restoration of biodiversity and ecosystems” can be ruled out since the charging stations are built on existing parking lots. The further regulations in respect of the circular economy and pollution prevention and control largely constitute elements of current EU legislation. As we build and maintain charging infrastructure in collaboration with service providers for whose activities no evidence has yet been provided of compliance with the criteria for a circular economy, we are reporting the Comfort Charge business for the reporting year as non-taxonomy-aligned.

Cross-cutting activities

Deutsche Telekom has a vehicle fleet that includes both company cars and service vehicles. The economic activity **Transport by motorbikes, passenger cars, and light commercial vehicles (6.5)** is therefore relevant as a cross-cutting activity that applies to the purchase, the lease, and the operation of vehicles of the classes M1 (passenger cars) and N1 (light commercial vehicles with a maximum weight of 3.5 t). As we are pushing forward with the transition to a fully electric fleet, especially in Germany and the EU, the majority of new vehicles purchased already meet the CO₂ thresholds set in the EU taxonomy. We were also able to provide evidence of the alignment of these vehicles with the other key EU taxonomy requirements, which are based on current EU legislation for new vehicles. As the choice of tires is left to the vehicle users themselves, we could not provide evidence of the taxonomy alignment of tires for the reporting year. We therefore report capital expenditure associated with our vehicle fleet as non-taxonomy-aligned.

Calculation of the taxonomy KPIs

The total Group figures used as the basis for calculation in accordance with the EU taxonomy in the reporting year amounted to EUR 114.2 billion (turnover), EUR 38.5 billion (capital expenditure), and EUR 0.4 billion (operating expenditure). The definition of turnover according to the EU taxonomy is equivalent to net revenue in our consolidated income statement contained in the consolidated financial statements. The relevant capital expenditure was determined on the basis of the consolidated statement of financial position contained in the consolidated financial statements and is determined as the sum of additions and changes within the consolidated group under property, plant and equipment, intangible assets (excluding goodwill), and right-of-use assets. In line with the EU taxonomy regulations, the disclosures on capital expenditures do not form part of a capital expenditure (capex) plan. The EU taxonomy defines costs that relate to research and development; building remediation measures; short-term leases; maintenance, and repair; and any other direct expenditures relating to the day-to-day maintenance of property, plant and equipment as relevant operating expenditure.

The disclosures on taxonomy eligibility and taxonomy alignment in terms of turnover, capital expenditure, and operating expenditure are directly assigned at the level of product groups to either the operation of data centers in accordance with economic activity 8.1. or the provision of ICT solutions in accordance with economic activity 8.2. The same applies to economic activity 6.15; the expenditure disclosed for this activity is assigned directly to the installation and operation of charging solutions. We do not generate any turnover with cross-cutting activities. Exclusively capital expenditure was assigned to economic activity 6.5.

To avoid double counting under the EU taxonomy, T-Systems’ taxonomy-eligible cloud solutions are only attributed to economic activity 8.2; they are not disclosed under economic activity 8.1. In addition, capital and operating expenditures were only assigned to the cross-cutting activity 6.5 if a direct correlation between the measures financed and the turnover-relevant economic activities 8.1, 8.2, and 6.15 was excluded.

As the EU taxonomy does not yet adequately cover our core business, an aggregate view of the taxonomy eligibility of all economic activities results in very low proportions again in 2022 of turnover (1.8 %), capital expenditure (0.8 %), and operating expenditure (33.5 %) for the Deutsche Telekom Group. The largest proportion of taxonomy-eligible capital expenditure can be allotted to property, plant and equipment (69.6 %), followed by intangible assets (18.1 %) and right-of-use assets (12.3 %).

The largest proportion of taxonomy-eligible turnover, capital expenditure, and operating expenditure can be allotted to economic activity 8.1: based on the relevant total figures for the Group, taxonomy-eligible business activities for data processing and hosting represented 1.0 % of turnover, 0.4 % of capital expenditure, and 19.0 % of direct expenses. To enable a statement of taxonomy eligibility at segment level, too, we also report supplementary KPIs for the Systems Solutions operating segment. The taxonomy-eligible portion, determined using the same calculation logic, is 36.0 % in relation to external turnover of the segment, and 62.6 % in relation to capital expenditure.

In second place, with 0.8 % taxonomy-eligible turnover, is economic activity 8.2, to which the business-related web conferencing solutions make a substantial contribution. The Comfort Charge business encompassed by economic activity 6.15, which in the 2022 financial year did not generate any material taxonomy-eligible turnover, is still under development. Cross-cutting activity 6.5 has only a supporting function for Deutsche Telekom's core business.

In the 2022 financial year, the taxonomy-aligned proportion of all economic activities of the Deutsche Telekom Group was 0.5 % of turnover, 0.0 % of capital expenditure, and 0.4 % of operating expenditure. The taxonomy-aligned proportion is attributable to economic activity 8.2 Data-driven solutions for GHG emissions reductions. For the Systems Solutions operating segment, the taxonomy-aligned proportion of turnover was 12.3 %, 0.1 % of capital expenditure, and 0.8 % of operating expenditure.

Given the high standards laid down in the technical screening criteria, the transformation is expected to be a lengthy process. We plan to increase the taxonomy alignment of our economic activities on a continual basis.

EU taxonomy KPIs

Deutsche Telekom Group
in 2022

	Turnover		Substantial contribution to environmental objectives		Do no significant harm to environmental objectives						Minimum safeguards	Category "enabling activity"	Category "transitional activity"
			Climate change mitigation	Climate change adaptation	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular economy	Pollution	Bio-diversity and ecosystems			
			%	%	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No			
Relevant total figures for the Group	114,197	100.0											
Of which: taxonomy-eligible^{a, b}	2,063	1.8											
Of which: code/taxonomy-aligned activities													
8.2 Data-driven solutions for GHG emissions reductions	565	0.5	100.0	0.0	n.a.	Yes	n.a.	Yes	n.a.	n.a.	Yes	E	-
Total	565	0.5											
Of which: code/non-taxonomy-aligned activities													
8.1 Data processing and hosting	1,124	1.0											
8.2 Data-driven solutions for GHG emissions reductions	364	0.3											
6.15 Infrastructure enabling low-carbon road transport and public transport	10	0.0											
6.5 Transport by motorbikes, passenger cars, and light commercial vehicles	0	0.0											
Total	1,498	1.3											
Of which: non-taxonomy-eligible	112,134	98.2											

^a The taxonomy-eligibility of the product portfolio was comprehensively reviewed in the reporting year. On this basis, connected car solutions, which in the prior year had been reported as taxonomy-eligible, were no longer reported as such. Instead, taxonomy-eligible IoT solutions are included in the reporting year.
^b In the prior year, our focus had been on the taxonomy-eligible economic activities that are explicitly assigned to the IT and telecommunications industry. For the reporting year, the business areas of Deutsche Telekom were considered from an end-to-end perspective, including the solutions from Comfort Charge.

For further information on turnover, please refer to the consolidated income statement in the consolidated financial statements or to Note 20 "Net revenue" in the notes to the consolidated financial statements.

Deutsche Telekom Group in 2022			Substantial contribution to environmental objectives		Do no significant harm to environmental objectives							Minimum safe- guards	Category “enabling activity”	Category “transi- tional activity”
					Climate change miti- gation	Climate change adap- tation	Climate change miti- gation	Climate change adap- tation	Water and marine resources	Circular economy	Pollution			
			Climate change miti- gation	Climate change adap- tation	Climate change miti- gation	Climate change adap- tation	Water and marine resources	Circular economy	Pollution	Bio- diversity and eco- systems	Minimum safe- guards	Category “enabling activity”	Category “transi- tional activity”	
			%	%	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	E / -	T / -	
Relevant total figures for the Group	38,486	100.0												
Of which: taxonomy-eligible^{a, b}	310	0.8												
Of which: code/ taxonomy-aligned activities														
Total	0	0.0												
Of which: code/non- taxonomy-aligned activities														
8.1 Data processing and hosting	171	0.4												
8.2 Data-driven solutions for GHG emissions reductions	3	0.0												
6.15 Infra- structure enabling low- carbon road transport and public transport	5	0.0												
6.5 Transport by motorbikes, passenger cars, and light commercial vehicles	130	0.3												
Total	310	0.8												
Of which: non-taxonomy-eligible	38,176	99.2												

^a Whereas in the prior year the focus had been on the taxonomy-eligible economic activities that generate turnover, in the reporting year major taxonomy-eligible cross-cutting activities were also considered.

^b Unlike in the prior year, in the reporting year with regard to the taxonomy-eligible economic activity 8.1, we also report the capital expenditure and direct operating expenditure associated with the infrastructure, hardware, and software used in the data centers in the Systems Solutions operating segment.

For further information on capital expenditure, please refer to Note 5 “Intangible assets,” Note 7 “Property, plant and equipment,” and Note 8 “Right-of-use assets” in the notes to the consolidated financial statements. The capital expenditure given here also includes the additions of all non-current assets and disposal groups held for sale in the 2022 financial year.


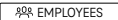
Deutsche Telekom Group in 2022			Substantial contribution to environmental objectives		Do no significant harm to environmental objectives							Minimum safe- guards	Category “enabling activity”	Category “transi- tional activity”
					Climate change miti- gation	Climate change adap- tation	Climate change miti- gation	Climate change adap- tation	Water and marine resources	Circular economy	Pollution			
Operating expenditure			%	%	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	E / -	T / -	
millions of €			%	%	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	E / -	T / -	
Relevant total figures for the Group	404	100.0												
Of which: taxonomy-eligible^{a, b}	135	33.5												
Of which: code/ taxonomy-aligned activities														
8.2 Data-driven solutions for GHG emissions reductions	2	0.4	100.0	0.0	n.a.	Yes	n.a.	Yes	n.a.	n.a.	Yes	E	-	
Total	2	0.4												
Of which: code/non- taxonomy-aligned activities														
8.1 Data processing and hosting	77	19.0												
8.2 Data-driven solutions for GHG emissions reductions	57	14.1												
6.15 Infra- structure enabling low- carbon road transport and public transport	0	0.0												
6.5 Transport by motorbikes, passenger cars, and light commercial vehicles	0	0.0												
Total	134	33.1												
Of which: non-taxonomy-eligible	269	66.5												

^a Unlike in the prior year, in the reporting year with regard to the taxonomy-eligible economic activity 8.1, we also report the capital expenditure and direct operating expenditure associated with the infrastructure, hardware, and software used in the data centers in the Systems Solutions operating segment.

^b In contrast to the prior year, the definition of operating expenditure was extended for the reporting year in the Systems Solutions operating segment. Operating expenditure now includes direct operating expenditure associated with the infrastructure, hardware, and software used to operate the taxonomy-eligible solutions.

For further information on operating expenditure, please refer to Note 26 “Other operating expenses” in the notes to the consolidated financial statements.

Aspect 2: Employee concerns

With their commitment, expertise, and high performance, our more than 200,000 employees ensure that we live up to our ambition to always be there for our customers, to operate a stable network, to grow the Company, and to pave the way for the digital society. They are crucial to our business success. Six Guiding Principles, representing our values, form the cornerstones for collaboration within our Company. We have defined our strategic HR priorities in line with the motto: “Supporting people. Driving performance.” We attach great importance to employee involvement and fair behavior toward colleagues, promote diversity, and engage in systematic health management.  

For our Guiding Principles and further information about our HR work, please refer to the section “Employees.”

For information on the opportunities and risks associated with employees, please refer to the section “Risk and opportunity management.”

Collaboration with employees' representatives and trade unions SDG 8 EMPLOYEES

Digitalization is fundamentally changing the way we work together. Employees are expected to demonstrate ever-greater flexibility, social skills, and autonomy, to continue learning throughout their lives, and to work with greater independence. We have made it our goal to support our employees in this transformation – and to help them not only to manage change, but also to take an active role in shaping it.

Codetermination rights play a key role in the digital transformation. Together with employees' representatives and trade unions, we want to create the working world of the future – with an eye to the needs of our workforce and the success of our Company. As the underlying laws and contracts vary from country to country, codetermination matters are managed locally with trade unions and employees' representatives. Group management is generally involved in issues of particular importance.

The works councils, central works councils, and Group Works Council represent the interests of Group employees in Germany. Our partner representing the employees' interests on a European level is the European Works Council (EWC). We also have executive staff representation committees and representatives of disabled employees at unit, company, and Group level. The EWC has been one of our established key dialog partners for many years, representing the interests of our employees in countries within the European Union and the European Economic Area. The EWC has 32 seats (prior year: 32), 28 of which are currently occupied (prior year: 29) (as of December 31, 2022). Collective bargaining plays an important role and has a long tradition at our Company, a fact made clear by the percentage of employees covered by collective agreements. As of December 31, 2022, 73 % of employees in Germany were covered by collective agreements (prior year: 73 %). We record the Group-wide coverage rate every two years. As of December 31, 2022, it stood at around 45 %. In 2022, 90 collective agreements were signed with the trade unions in Germany (prior year: 115), which is a testament to the close cooperation with employees' representatives.

We also carefully monitored trade union matters in the United States over the course of 2022. The responsibility for national human resources management matters in the United States lies with T-Mobile US' management, who are deeply committed to exercising this responsibility. Across the globe, Deutsche Telekom respects the rights to freedom of association and collective bargaining in accordance with national law. This naturally also applies to the United States, with all employees at T-Mobile US entitled to form or join a trade union. At the same time, employees are also free to choose not to do so. T-Mobile US will not exert any influence in this respect, neither favoring nor discriminating against employees because of a decision they have made.

Collaboration with employees' representatives is founded on our commitment to trusting cooperation – anchored in our Group-wide Employee Relations Policy, which sets out twelve core elements describing what we stand for as an employer around the world. The policy also describes our aspiration with regard to the following HR topics: virtual working, employee development, responsible handling of changes, health and sustainability, fair pay, work-life balance, leadership, diversity, the prohibition of discrimination, and how we communicate and work together with employees' representatives. Topics such as freedom of opinion and digitalization are also addressed. Our Code of Human Rights & Social Principles policy statement also includes our global voluntary commitment to safeguarding the freedom of association and the right to collective bargaining (in compliance with national law in each case).

Our employee survey, carried out every two years, is a key indicator of the relationship between our Company and its workforce. We supplement it with pulse surveys, which give us a snapshot of the mood of our employees twice a year. More than 100,000 colleagues, or 76 % of the total workforce, took part in the most recent pulse survey, which was held in November 2022. The survey asked employees about sustainability, among other topics, with considerable success: 84 % of those surveyed (2021: 84 %) stated that they identified with Deutsche Telekom's environmental and social engagement. A total of 83 % (2021: 83 %) believe that Deutsche Telekom acts responsibly toward the environment and society. The values reflect the survey findings excluding T-Mobile US, since T-Mobile US conducts its own employee survey.

For further information on the employee survey and the non-financial performance indicator "employee satisfaction," please refer to the section ["Employees."](#)

Diversity, equity, and inclusion SDG 10 EMPLOYEES

People from over 115 countries work successfully together at Deutsche Telekom. They all bring their diverse skills and cultural characteristics to the workplace. Respecting the individuality of our employees and harnessing their diversity for our joint success is just as important for our Group as developing a shared corporate culture. That is why the Human Resources and Legal Affairs Board of Management department includes a Diversity team. Our Group policy on Diversity, Equity and Inclusion, the six Guiding Principles, the Employee Relations Policy, and the Code of Human Rights & Social Principles policy statement form the foundation of our commitment to diversity. We are also a founding member of the Diversity Charter corporate initiative. In Germany, for example, our collective agreements on remuneration and other matters reached with the trade unions ensure transparent, gender-neutral compensation.

In line with the key dimensions of diversity set out by the Diversity Charter, we offer all employees – irrespective of age, ethnic origin and nationality, gender and gender identity, physical and mental abilities, religion and worldview, sexual orientation, and social origin – many development opportunities. We have developed action plans for each dimension of diversity so that we can make our working environment even more inclusive and put our diversity strategy in place in the various units. These measures include, for example, creating a prayer room and carrying out anti-racism workshops. During the reporting year, we also published a handbook focusing on care and support for transgender employees, which is aimed at fostering an inclusive workplace. Diversity, equity, and inclusion (DE&I) are also deeply rooted in the culture of T-Mobile US. In January 2021, T-Mobile US launched its strategic DE&I plan Equity in Action, which focuses on employees and on the key elements of talent, culture, brand, and digital equity. As part of the strategy, T-Mobile US obtains advice on DE&I questions from the External Diversity and Inclusion Council, which includes members from civil rights organizations. The representatives of the council provide input on setting priorities, goals, and shared endeavors. It also helps T-Mobile US implement its Equity in Action plan and the 54 DE&I promises.

Alongside these action plans, we are also continuing to move forward on cross-segment issues. These include mentoring programs, flexible working models, child care services, advisory services for those caring for family members, inclusion surveys, a global talent hub, and innovative ideas for dealing with demographic change. We also offer various training courses that shine a light on unconscious bias in order to reveal hidden prejudices. Last but not least, we support our many employee networks in Germany, such as MagentaPride, Women@telekom, the fathers' network, and the newly established network BIPoC@DT (Black, Indigenous and People of Color). At T-Mobile US, there is an internal diversity, equity and inclusion (DE&I) network. The network includes a group for persons with disabilities, a multicultural group with sub-groups, a multi-generational network, an LGBTQI+ community, a network for veterans and active members of the military, and a women's network.

For further information on equity and diversity in our Group, please refer to the section “Employees.”

Occupational health and safety

Measures that promote health within the Company not only help individual employees and ensure long-term business success, but also have positive effects outside of the Company. For example, certain vaccinations and care services are also available to the families of employees. We use holistic health management to take on social responsibility and promote a proactive culture of health. We support our employees in maintaining their health and occupational safety with a host of target audience-specific measures and extensive prevention programs. We consider the statutory requirements to be only the minimum standard we must achieve. Our corporate occupational health and safety measures are effectively incorporated into our structures via certified management systems and appropriate policies and guidelines. We support the Group-wide approach with an internationally harmonized quality, work, health, and environmental management system based on the international standards ISO 9001, ISO 45001, and ISO 14001.

The Board of Management bears overarching responsibility for safeguarding health, occupational safety, and the environment. We manage cross-segment measures at Group level; the Group companies have health & safety managers who are responsible for specific processes and offerings that take into account special requirements and conditions right down to company level. We systematically evaluate the measures to ensure they are effective. The health rate, for instance, is reported to the Board of Management once per quarter. In addition, we review the results of our employee survey, analyses of stress prevention measures under collective agreements, health insurance reports, and competitor benchmarks. We analyze this data and use it to derive suitable measures each year. For example, following the 2021 employee survey, all teams in participating countries were given suggestions for measures based on the health index ascertained for their particular country. Raising awareness, prevention, and encouraging individual responsibility are high priorities at our Company.

Group-wide initiatives serve to promote health awareness and health literacy among our employees. In Germany, a range of services are available to employees to promote health in the workplace, including comprehensive check-ups, colon cancer screenings, and flu shots. Between June 2021 and March 2022, the Betriebsärztlicher Dienst (BAD) occupational health service also provided Deutsche Telekom employees with vaccinations against the coronavirus (first, second, and booster vaccinations).

The health promotion program also includes courses on nutrition, exercise, and relaxation (stress prevention, mindfulness, etc.). Alongside campaign days such as a mindfulness day and a mental health day, series of presentations were established, together with individual offerings such as a sleep consultancy service and a nutrition clinic. We also offer the use of the Fitmit5 app, which aims to promote healthy break management. Our employees can use the corporate health promotion options free of charge, generally during working hours.



In addition, with our Germany-wide employee and executive advisory service, we offer a portfolio of support services in the area of psychosocial health, but also crisis prevention and advice in the event of psychosocial crises and extreme incidents. In 2022 we set up an advisory service for international employees affected by the war in Ukraine at short notice.

Standards have been put in place in Germany to improve occupational safety by regulating aspects such as safe, ergonomic environments in buildings and vehicles. In addition to services available to all employees, there are also target group-specific measures, e.g., driver safety training for certain areas of work. Our aim is to promote employees' health, boost their motivation, and improve the health rate.

Several key figures validate our performance in terms of corporate health management services. The health rate at Deutsche Telekom entities in Germany, including long-term illnesses, was 93.8 % in 2022 (prior year: 95.3 %). Excluding long-term illnesses, the health rate in 2022 stood at 95.2 % (prior year: 96.7 %). The worsening of the figure in 2022 is presumably a result of the gradual return to normality as pandemic protection and hygiene measures came to an end.


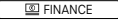
The total number of work-related accidents increased in comparison with the previous year. The accident rate in Germany was 5.5 accidents (resulting in over three days of absence) per thousand employees (prior year: 4.2). This figure also includes occupational accidents associated with the coronavirus pandemic. Excluding these Covid-19 cases, the accident rate in Germany was 4.4. The health index, which is measured every two years as part of the employee survey, increased slightly in 2021 in comparison with the previous survey. The score from the 2021 employee survey for the health index was 69 on a scale of 0 to 100. In the 2019 survey, the index had been shown as an average on a scale from 1 to 5, with a value of 3.6. When converted to the new scale, this represents 65 points, which means the index improved by 4 points. Preparations for the next round of surveys will begin in 2023.



Aspect 3: Social concerns

Access to state-of-the-art information technology is key to participating in the information and knowledge society. We aspire to enable as many people as possible to participate – also and especially in times of crisis. We are delivering on that promise with an array of different activities. In this context, the security of our customers' data is of prime importance. But the internet is also supposed to be a space in which all people can feel safe and where we interact on the basis of democratic principles. That is why we are actively pushing for a positive culture of online debate, promoting the competent use of ICT, and making a stand against hate speech and for civil courage online. As a relevant player in society, and committed as we are to exercising social responsibility, we also provide rapid help in emergencies. During the reporting year, this rapid help was particularly necessary when war broke out in Ukraine.  



For further information on our corporate identity and our Guiding Principles, please refer to the sections "[Group organization](#)" and "[Employees](#)."

Network access and digital responsibility


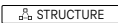
All around the world, having access to state-of-the-art information technologies is a precondition for economic performance and participation in a knowledge and information society. That is why we continue to rapidly expand our infrastructure and improve transmission speeds with new, secure technology.  


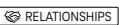
Demand for faster data services with full-coverage availability is growing continuously. Group-wide, we invested around EUR 21 billion primarily in building and operating networks, with around EUR 4.4 billion of this figure earmarked for the Germany operating segment alone. This is in addition to the investments that we make in acquiring mobile spectrum. Hence, the majority of the Group's investment volume in Germany is for the build-out of broadband networks. This build-out is based on the goals of our Europe-wide integrated network strategy, which we use to help achieve the EU Commission's network build-out targets and the Federal Government's Digital Agenda and broadband strategy. The strategy is founded on two pillars – building out mobile networks and rolling out optical fiber, with 5G coverage being the focus of the former. By the end of 2022, we already covered 94.8 % of German households with 5G. In more than 600 cities across Germany, the 5G network was available in the 3.6 GHz band at top speeds (as of the end of 2022). At the end of the reporting year, our fixed network provided around 37.1 million households in Germany with fiber-optic-based technology. Our fixed-network strategy is based on connecting households directly to the fiber-optic network (Fiber to the Home, FTTH): in 2022, we expanded fiber-optic coverage to around 2 million additional households in Germany, bringing the total number of households with the option to subscribe to a fiber-optic line to 5.4 million. In addition to the FTTH build-out, we are using other innovative products, such as our hybrid router, which combines the transmission bandwidths of fixed-network and mobile communications, thus attaining higher transmission speeds – particularly in rural areas.  

For further information on our build-out targets, please refer to the sections "[Group strategy](#)" and "[Forecast](#)."

In general, we want to make our network infrastructure and our products as efficient, environmentally friendly, and harmless to health as possible. That is why we are committed to addressing the topic of mobile communications and health responsibly. In the context of the 5G build-out, there is public debate around the potential effects of 5G on health. We have been providing information on the scientific evidence regarding mobile communications and health for more than 20 years now. Together with Telefónica Deutschland, Vodafone, and 1&1 Mobilfunk, we also support the information platform www.informationszentrum-mobilfunk.de. This platform provides expert, evidence-based information on mobile communications topics subject to controversial public debate, such as health, research, technology, benefits, and applications. In 2022, the platform cooperated with the German Federal Government communication initiative “Deutschland spricht über 5G” (Germany is talking about 5G), for example, by supporting initiatives to establish a dialog with citizens. We adopted our Group-wide EMF Policy (EMF being short for “electro-magnetic fields”) back in 2004. It defines standard requirements – which considerably exceed the applicable national legal requirements – for addressing mobile communications and health-related matters.  

| For further information, please refer to the section “[Risk and opportunity management](#).”


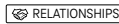
Responsibility for shaping the digital transformation has to be assumed by society as a whole. Our Board of Management plays an active role in this discussion, which entails looking at matters such as how we can use artificial intelligence (AI) responsibly. AI is a feature of an ever-growing number of ICT products and services that often goes unnoticed. It opens up opportunities, but also presents challenges. Back in 2018, under the auspices of Compliance Management, we were one of the first companies worldwide to adopt AI guidelines on digital ethics. These guidelines provide a framework for a responsible approach to AI. To supplement them, in 2021 we worked with experts to draw up professional ethics guidelines for all developers and product managers working with AI. The guidelines provide best practices, methods, and tips for transferring the Digital Ethics Guidelines on AI to application in development processes.  

We founded an interdisciplinary working group in 2022 that will address the development, monitoring, and implementation of digital ethics, anchoring the topic firmly within the Group. The working group is also preparing the enforcement of the upcoming EU AI Act. The working group is steered by the Board of Management members for Technology and Innovation and Human Resources and Legal Affairs, based on a co-creation approach. To ensure that in the supply chain, too, AI is developed that complies with our high ethical requirements, since early 2020 our Supplier Code of Conduct has included relevant content from our AI Guidelines.  

We at Deutsche Telekom are working to bring about digitalization oriented to people and values. Corporate digital responsibility (CDR) refers to efforts to manage the opportunities and risks of the digital transformation responsibly. The goals of our CDR activities are twofold: to prevent negative impacts, and to help shape the digitalization process in a positive way. In our Corporate Digital Responsibility framework, which we published in 2022, we set forth our perspectives on the far-reaching subject area of digital responsibility.


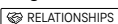
| We will publish detailed information on this in our 2022 CR Report at the end of March 2023.

Connect the unconnected

To ensure equal participation for all in the information and knowledge society, the affordability of products and services is just as important as technical access. The ability to use digital media safely, responsibly, and to the benefit of all is becoming increasingly important. That is why we are working to build media literacy and democracy skills in the population. In doing so, we are guided by the aspiration that this digital participation also includes participation in society.  

The individual national companies are responsible for implementing projects on digital participation. These include projects in Slovakia and the United States: Deutsche Telekom IT Solutions Slovakia is supporting schools and teachers with particularly innovative and creative teaching approaches in primary schools in the programs School of the Future and Teacher of the Future, while T-Mobile US has launched two different challenges: a Family Challenge and the Changemaker Challenge, a contest in which young people contribute ideas for better coexistence in the categories digital participation, equal opportunities, and the environment. A total of 16 teams took part in the Changemaker Lab, a workshop on social entrepreneurship. Three teams won additional funding for their projects. The 10Million Project, which was launched by T-Mobile US in 2020 and aims to overcome the digital divide in education, had provided some 4.3 million school students with internet access free of charge by June 2022.

All of our initiatives for greater media literacy in Germany can be found on the website “[Media, sure! But secure.](#),” where we provide information material for all target groups. Deutsche Telekom’s #TAKEPART stories – topics from the digital world for teenagers and young adults – are a practical take on digitalization issues of social relevance, translating them into a range of offers for multipliers – like teachers, for instance. The aim is to raise awareness, highlight alternatives, and try out new behaviors. All modules of the #TAKEPART stories are also available in simplified German. Our multiple award-winning “[Teachtoday](#)” initiative promotes the safe and competent use of online media by children and young people. A toolbox is provided by the initiative for multipliers and teachers. It comprises more than 130 formats that deal mainly with media literacy and democracy skills. The initiative additionally publishes the interactive digital children’s magazine SCROLLER, which also provides material and background information to be used in media literacy lessons.  

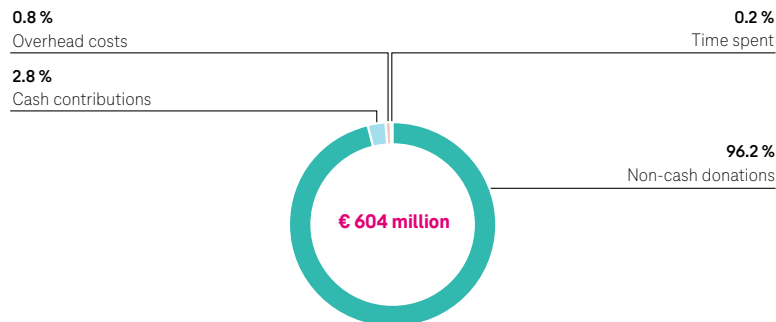
In 2022, we successfully continued our No Hate Speech campaign. We launched our new campaign ad on July 22, 2022, to mark International Action Day in Support of Victims of Hate Crimes. The ad aims to motivate the silent majority to get active against hate speech and abusive language online. As in the previous year, the focus of the campaign included gaming and e-sports: to mark Germany’s Digital Day on June 16, 2022, we gave a webinar titled “Gaming, chatting, hating – when gaming talk gets toxic.” We also support the #SpeakUpEsports campaign run by the esports player foundation in which 70 leading figures from the world of esports speak out in support of fair play and against hate speech in a series of short videos. With our No Hate Speech campaign we reached around 1 billion media contacts in the reporting year. We reached more than 4 million people directly or through multipliers such as parents and educators (e.g., in workshops) in 2022 alone (prior year: 3.8 million). We have labeled the campaign and our associated engagement with #GoodMagenta. We have also won a range of awards and prizes for the No Hate Speech campaign. [SDG 16](#) [RELATIONSHIPS](#)

The topic of data privacy is part and parcel of using digital media safely and securely. Our online guidebook Digitally secure offers practical advice on how to use digital media safely and securely. [SDG 16](#) [RELATIONSHIPS](#)

We measure the impact of our social commitment with a set of three ESG KPIs. The Community Contribution ESG KPI maps our social commitment in terms of financial, human, and material resources: in 2022, it amounted to around EUR 604 million in Germany (prior year: EUR 56 million). A particular effect in the reporting year was our support for Ukraine, which included free phone calls and SIM cards in the amount of almost EUR 550 million. The Reach– Focus Topics ESG KPI shows the number of media contacts we have reached with our communication on our focus topics of “digital participation” and “low-carbon society.” This includes, for instance, the people we reached in the 2022 financial year with advertising and content on socially relevant topics, such as online hate speech: we recorded an increase from 837 million the prior year to around 1,150 million people in Germany. The Beneficiaries ESG KPI shows the number of people who have benefited from our commitment to digital participation and the low-carbon society, for example, workshop participants, users of lower-cost rate plans, including other household members, and many more. In 2022, the number of beneficiaries was around 25 million (prior year: 21 million).

| We will publish detailed information and Group-wide figures in our 2022 CR Report at the end of March 2023.

Community Contribution ESG KPI



Emergency aid for Ukraine [SDG 16](#) [RELATIONSHIPS](#)

Deutsche Telekom reacted quickly in spring 2022, initiating wide-ranging emergency aid measures in Europe for Ukrainians in crisis. One example of the aid we offered was free prepaid SIM cards with free calls and data that were distributed in Poland, Romania, and Germany to Ukrainian refugees. Our Hungarian subsidiary Magyar Telekom also donated cell phones. Calls to Ukrainian dialing codes were free of charge for several months in Germany and the United States. Broadband connections and routers were provided for refugee accommodation.

Several hundred Deutsche Telekom employees grouped together to coordinate the aid. Employees in our national companies, for example, in Poland, Hungary, and Slovakia, volunteered, mainly at the borders. In Hungary, Magyar Telekom provided a building near the border as accommodation for volunteers; employees of Magyar Telekom and Deutsche Telekom IT Solutions Hungary worked together to renovate the building for this purpose. We also donated money to help with aid activities in Ukraine. We gave EUR 1 million to the German Red Cross, for example. Many employees in the Czech Republic responded to the call to collect donations. T-Mobile Czech Republic additionally donated over EUR 220 thousand. In numerous countries in Europe, we offered jobs to refugees. New employees were also given help to find accommodation, open bank accounts, and organize child care. Our team of software developers based mainly in St. Petersburg, who provide services for customers outside of Russia, have been offered work outside of Russia.

Data privacy and data security [SDG 16](#) [STRUCTURE](#)

People will only use ICT solutions if they trust in the security of their personal data – and only then can these solutions develop their true potential for more sustainable development. As a result, we attach particularly great importance to protecting and securing data.

| For further information, please refer to the section “Risk and opportunity management.”

Our active data privacy and compliance culture, which has been built up over many years, sets national and international standards. The data privacy-related compliance management system outlines the measures, processes, and audits we use to ensure compliance with laws, regulations, and voluntary commitments to uphold data privacy in the Group. Since 2009, the Group Board of Management has been advised by an independent Data Privacy Advisory Board comprising reputable experts from politics, the research community, business, and independent organizations.

Through our global data privacy organization, we are continually pursuing the objective of a transparent, high level of data protection in all of the Group companies. As far as legally possible, the companies of the Deutsche Telekom Group have additionally committed to the Binding Corporate Rules Privacy, which are intended to ensure a uniform high level of data protection for our products and services in accordance with ISO 27701.

The Group Security Policy contains significant security-related principles valid within the Group, which are based on the international ISO 27001 standards. This is how we guarantee an adequately high and consistent level of security throughout our entire Group. Similar to the data privacy organization, the Group has established a global security organization which operates both on a centralized basis and in all Group entities. These elements lay the foundation for ensuring an adequate and consistent level of security within our entire Group.

We issue an annual transparency report – since 2014 in Germany, and since 2016 in our other national companies in Europe – in which we set out the nature and scope of our disclosures to security authorities. We are thus fulfilling our statutory duty as a telecommunications company.

In order to ensure even better data privacy and data security within our Group, our corporate units are audited and certified several times a year by internal and external experts. This includes the annual (re-)certification of the Telekom Security Management in accordance with ISO 27001, regular Group-wide internal security checks, and the annual review of the individual Group units in connection with security maturity reporting. These audits help us assess the status quo of security in our Group and respond to requirements at Group or entity level at an early stage.

Every two years, we perform a sample survey of data privacy and data security awareness across the Company. In the course of the Group Data Privacy Audit (GDPA), we survey around 21,000 Deutsche Telekom employees (excluding T-Mobile US) on topics related to data privacy and data security. Of the employees invited to take part in 2022, around 16,000 responded. The results are used to calculate the Data Protection Award indicator – which quantifies the level of data protection in the units on a scale from 0 to 100 %. It is based on what the employees said they thought, did, and knew about data protection. The Data Protection Award indicator was calculated in 2022 at 88 % (2020: 86 %).

We use our Online Awareness Survey (OAS) as a tool for collecting indicators on security awareness within the Company. Some 42,000 employees (excluding T-Mobile US) across all levels of the hierarchy were invited to take part in the survey. Around a third responded. With academic support, we use the results from this survey to determine the Security Awareness Index (SAI). In the last survey in 2021, the index was 80.9 of a maximum of 100 points – higher than in any other benchmark company. The next survey is scheduled for fall 2023. We also have our processes and management systems as well as products and services certified by external, independent organizations such as TÜV, DQS, DEKRA, and auditing firms.

Telecommunications companies are required to train their employees on issues related to data protection law when they begin their employment. Deutsche Telekom goes above and beyond these legal requirements: Every two years, we train all of our employees in Germany and place them under an obligation to uphold data privacy and telecommunications secrecy. Corresponding requirements apply to our international companies. Where there is a greater risk of data such as customer or employee information being misused, we also offer additional online training designed for self-study, give data privacy presentations, and host classroom training courses on specialized topics such as protection of customer data.

Our subsidiary Deutsche Telekom Security is one of the leading providers of digital security. As the market leader in the DACH region and the hub of cybersecurity expertise for the entire Deutsche Telekom Group, the company has successfully protected more than just our own infrastructure. Our customers are offered the same highly professional solutions that are used to protect Deutsche Telekom itself around the world.

We react to new emerging threats and continuously develop innovative processes for defending against attacks. And for good reason: cyberattacks on companies are becoming more aggressive and sophisticated across all industries. In the reporting period alone, we registered on average almost 54 million attacks per day on our honeypot systems (prior year: 52 million). At its peak, the number of attacks per day reached up to 111.2 million. Of course, not all of the attacks picked up by our sensors are high-level. Most are automatic scanning processes to detect potential vulnerabilities. While these do not necessarily count as fully fledged attacks, they are still to be seen as relevant early-stage activities. Deutsche Telekom Security even develops its own malware in a shielded environment and uses it to test whether new systems can reliably detect and mitigate these attack vectors. In this way we ensure our own critical IT infrastructure is protected. We also offer other operators of critical infrastructure advisory services, for example energy providers.

Our security experts use their experience to help develop security solutions for our customers. Deutsche Telekom has brought a wide range of solutions to market maturity; in 2022, these included the Magenta Managed Detection & Response Endpoint, a solution enabling companies to react rapidly to threats and, if necessary, to stop processes in time to prevent further damage. With SASE, we also provide our customers with comprehensive protection in the cloud, so that they can work securely from anywhere. Data privacy and security play a fundamental role in the development of our products and services. We review the security of our systems at every step of development using the Privacy and Security Assessment process for new and existing systems when the technology or method of data processing is modified. We use a standardized procedure to also document the data privacy and data security status of our products throughout their entire life cycle. Our security management systems are certified externally. At the same time, we ensure that our services also comply with specific regulatory requirements from other industries, such as TISAX®, an established standard in the automotive industry.

Youth protection aspects are also taken into consideration in our product and service design. When we develop services that could be relevant in terms of youth protection in Germany, we consult our Youth Protection Officer for suggestions of restrictions or changes. In 2014, we appointed a Child Safety Officer (CSO) in each of our national companies in Europe. The CSO acts as a central contact for the relevant stakeholders of the community, and plays a key internal role in coordinating issues relevant to youth protection. Since protecting minors when they interact with media is a challenge across many different industries, we cooperate with different youth protection organizations and participate in alliances such as the “Alliance to better protect minors online,” which aims to make the internet a safer place for children and young people.

 SDG 3  RELATIONSHIPS

We work with research institutes, industry partners, initiatives, standardization bodies, public institutions, and other internet and telecommunications service providers worldwide with a view to fighting cybercrime and enhancing internet security together. For instance, we collaborate with the German Federal Office for Cybersecurity throughout Germany, and with the European Union Agency for Cybersecurity (ENISA) at EU level. We have also been involved in other national and international organizations for many years, such as the Federation of German Industries, Bitkom, and the Munich Security Conference. The Cyber Security Cluster Bonn is an association of authorities and companies in Bonn that are dedicated to consulting, education, and research in the field of cybersecurity. As an expert committee, the Cyber Security Cluster Bonn offers direct advice to German and European government bodies.

 SDG 17  RELATIONSHIPS

Aspect 4: Respecting human rights

We place high priority on respecting human rights. This applies not only to our Company, but also to our business partners and our approximately 25,000 suppliers in more than 150 countries – whom we explicitly place under the same obligations.

Labor standards in our own business area and at our suppliers SDG 10 EMPLOYEES

There are still places in the world where human rights are not a given. As part of our global procurement activities, we can be exposed to country- and supplier-specific risks. These include, for example, inadequate local working and safety conditions. Violations cause severe damage to those affected and can result in reputational damage and negative financial consequences for companies.

For further information, please refer to the section [“Risk and opportunity management.”](#)

As a responsible company, we have made an express commitment to upholding the UN Guiding Principles on Business and Human Rights adopted by the United Nations Human Rights Council in 2011 (Ruggie Principles). The obligation to respect human rights is anchored in our core regulations – i.e., our Guiding Principles and our Code of Human Rights & Social Principles policy statement, both of which have been approved by the Group Board of Management and by the managing bodies in Group companies. This underscores our commitment to protecting human rights and to the goals of the German National Action Plan on Business and Human Rights (NAP) adopted by the Federal Government in 2016. At the same time, the code embodies our commitment to complying with the principles laid down by the International Labour Organization (ILO), the Organisation for Economic Co-operation and Development (OECD), the Universal Declaration of Human Rights, and the UN Global Compact. In addition to these voluntary commitments, we also recognize the minimum social safeguards which, in line with the provisions of the EU taxonomy, are necessary conditions for the taxonomy alignment of economic activities. This means that we comply with the legal requirements of the German Act on Corporate Due Diligence in Supply Chains, which will apply as of 2023 reporting year. We also require our suppliers to comply with all our guidelines related to human rights.

In order to implement our voluntary commitments and the legal requirements, we have introduced a comprehensive program for minimizing risks, which we are constantly updating. The core elements of the program are regular risk analyses in our own business area and at our suppliers; a policy statement on human rights; awareness-raising among employees, suppliers, and business partners; a mechanism for lodging complaints; and reporting.

Regular reviews (Human Rights Impact Assessments, HRIA), which focus on respect for human rights and on the working conditions at our Company and at our suppliers, are a key component of the program. These systematic, comprehensive assessments allow us to ensure that human rights risks are identified and infringements can be prevented. Within the Group, we also focus our attention on preserving the right to collective agreements, and on ensuring diversity and equity. We publish the results of these assessments on our website. In 2022, we carried out HRIA assessments in three of our national companies: in Romania, in Slovakia, and in the Czech Republic. The aspect of digital ethics was included in these assessments for the first time. As part of our Digital Responsibility initiative, in 2022 we formulated our mission for the development of human-centered technology based on humanist values. This provides an additional frame of reference that supplements our existing guidelines, e.g., regarding our approach to artificial intelligence.



| We will publish detailed information on this in our 2022 CR Report at the end of March 2023.

Employees and external third parties could raise concerns and make complaints, anonymously if necessary, in the 2022 financial year through our point of contact for human rights issues, humanrights@telekom, and via the TellMe whistleblower portal. We look into all tip-offs received, including those that reach us outside of these channels, and introduce countermeasures, provided the information is identified as plausible. In 2022, five tip-offs relating to human rights were received via the point of contact and the whistleblower portal (prior year: 7). Not all of these tip-offs were deemed plausible. As we received two tip-offs regarding a Greek supplier during the reporting year, we carried out an extensive on-site audit. A team of experts visited a total of ten sites unannounced to check for potential violations of working conditions and compliance requirements. No violations were found. Within three months of receipt of the tip-offs, a comprehensive investigation had been carried out and concluded in dialog with all those concerned.


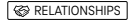
In addition, we conduct an annual formal review of compliance with our Employee Relations Policy. During the reporting year, these reviews were carried out as part of the of HRIAs in Romania, Slovakia, and the Czech Republic. Following a review of this type, the results are discussed with the regional manager of the national company in question.

At Group Headquarters, we pushed forward in 2022 with the process of anchoring human rights due diligence in the different governance processes. Part of this involved including human rights and environmental aspects in the annual Compliance Risk Assessment. This provides the opportunity for us to identify risks in our own business area at an early stage. In addition, we held numerous workshops with the functional units at Group Headquarters to ensure that the new legal requirements resulting, for example, from the Act on Corporate Due Diligence in Supply Chains, are taken into account.

Our perception of ourselves as a company that acts in a socially and ecologically sustainable way includes assuming responsibility along our entire value chain. We have been working to improve sustainability throughout our supply chain for many years. Our strategy for sustainable procurement practices is embedded in our procurement processes (excluding T-Mobile US). The heads of the CR and Procurement units are jointly responsible for its implementation. An escalation process calls for decisions to be made at Board of Management level in severe cases.

The Sustainable Procurement Group, a working group that has had an international focus since 2021, supports our national and international procurement units in implementing the sustainability requirements. At the same time, the group aims to promote discussion among employees in procurement. Our sustainability principles and their application in procurement are set out in the Procurement Practices in the Global Procurement Policy. In addition, there is a policy giving purchasing officers an overview of the CSR criteria that are to be taken into account at each stage of the procurement process. A CSR e-learning tool is available Group-wide to our employees in procurement providing training videos on the issue of sustainability in the procurement process.  

As a rule, we require our suppliers to accept the principles of our Supplier Code of Conduct and meet the associated requirements. Nonetheless, we cannot guarantee that all of our suppliers are up to the standard. To minimize risks and support suppliers in further developing their sustainability performance, we use a comprehensive risk management system for suppliers. The preliminary step involves a risk assessment for all material groups based on a defined set of CSR criteria. In addition, we carry out a comprehensive risk analysis for all suppliers in every category. Specialized companies assess our suppliers with regard to financial, CSR and compliance risks (excluding T-Mobile US). Sustainability performance is given a weighting of 20 % when we are selecting suppliers through invitations to tender. In this way, we can find out at an early stage if there is any increased risk with regard to specific sustainability aspects at any of our suppliers.

Sustainability assessments and reviews are additionally conducted for selected suppliers of product groups in high-risk categories. Depending on their individual sustainability performance and risk classification, we use a range of instruments, for instance, the information system EcoVadis, mobile employee surveys, and on-site supplier audits (social audits). Our focus here is not only on our direct suppliers but also, wherever possible, on downstream suppliers. We increase the effectiveness of our audits through our cooperation with the Joint Audit Cooperation (JAC), which currently consists of a large number of multinational telecommunications companies. In 2022, we carried out a total of 98 audits (prior year: 88) 83 social audits (prior year: 71) and 15 mobile surveys (prior year: 17), of which 40 (prior year: 34) at our direct and 58 (prior year: 54) at our indirect suppliers. Since 2010, we have carried out 910 audits (prior year: 812) within the framework of the JAC.  

We work in close cooperation with our strategically important suppliers on improving their sustainability performance, for example, in terms of environmental protection, working hours regulations, and occupational health. This is done primarily as part of the development program we initiated for suppliers. Since 2018, we have been implementing this program on the basis of a voluntary industry-wide approach known as the Sustainable Development Programme (SDP). In 2021, the SDP was migrated to the JAC. Alongside Deutsche Telekom, which heads the project, Telefónica, Swisscom, and Orange are working together to refine the SDP on an ongoing basis in accordance with the JAC sustainability targets. In the reporting year, four further suppliers (two of Deutsche Telekom and two of Swisscom) were included in the JAC (prior year: four). Since the launch of the program in 2014, a total of 33 suppliers have completed the SDP, achieving measurable ecological, social, and economic progress. For example, in 2022 one supplier saved over 3 metric tons of new plastics by reusing recycled materials.

Sustainability in procurement is measured based on the following ESG KPIs: the Procurement Volume Without CR Risk ESG KPI – for which the target is 95 % by 2025 – measures the procurement volume from direct business partners on whom an established external service provider carried out checks in the reporting period for negative reports in the media and found no irregularities. It also includes suppliers for whom irregularities were identified, but where corresponding corrective action was taken. The share of this procurement volume subjected to a risk assessment amounted to 99.6 % in 2022 (prior year: 99.7 %). The Procurement Volume Verified as Non-Critical ESG KPI – target for 2025: 60 % – by contrast, measures the share accounted for by suppliers checked for social and ecological criteria by means of dedicated reviews – e.g., through EcoVadis, the CDP, social audits, supplier visits, or our Supplier Development Programme. In 2022, the share of these CR-verified suppliers was 64.1 % (prior year: 60 %). In each case, the calculation is based on the Group-wide procurement volume that is already uniformly mapped to a large extent (excluding the Network Capacity category and T-Mobile US), but on different levels of supplier relationships.

Detailed information on our supplier management and measures preparing for the implementation of the Act on Corporate Due Diligence in Supply Chains will be published in our 2022 CR report at the end of March 2023.

Aspect 5: Fighting corruption

Corruption violates national and international law. We take a clear stance against any form of corruption in the public and private sector, whether this is active corruption in the form of bribery, or passive corruption in the form of bribe-taking. For this reason, our compliance management system is particularly geared towards preventing corruption.

Compliance management system

Our compliance culture is a key component for corporate governance based on integrity and respect. We have expressed our Group-wide commitment to complying with ethical principles and both legal and statutory requirements. We have incorporated this pledge in our Guiding Principles and our Code of Conduct.

We implemented a compliance management system with the aim of minimizing risks arising from systematic infringements of legal or ethical standards that could result in regulatory or criminal liability on the part of the Company, its executive body members, or employees, or result in a significant loss of reputation. The Board of Management considers its overall responsibility for compliance as a key leadership task. Our Chief Compliance Officer is responsible for the design and management of the compliance management system. Compliance officers implement the compliance management system and our compliance goals locally at the level of our operating segments and national companies.

Our compliance management system is based on the Compliance Risk Assessment (CRA), which we use to identify and assess compliance risks and introduce appropriate preventative measures. To this end, we have introduced a process to be carried out at regular intervals. The companies that will take part in the CRA are selected according to governance, based on the level of maturity of their compliance management system (maturity-based model). In the reporting year, the CRAs included 69 entities (61 companies and 8 central units) and covered 93.6 % (prior year: 98.1 %) of the workforce (according to the FTE figures for the fully consolidated companies and central units as of December 31, 2021). As a company listed on the United States stock exchange, T-Mobile US uses its own methodology to carry out a risk assessment; it reports regularly on this risk assessment to the relevant bodies, which include representatives of Deutsche Telekom AG. The individual Group companies are responsible for conducting the CRA, with support and advice given from the central compliance organization. We have our compliance management system reviewed regularly by independent auditors, with particular attention paid to anti-corruption measures. Nine German companies were audited in 2020. A further 13 international companies were then assessed in 2021. A total of 22 companies were thus successfully audited in the 2020 and 2021 financial years. A further audit of companies yet to be selected is planned for 2024. The audits focused in particular on processes in the companies that are exposed to an increased risk of corruption, for example, in procurement, sales, events, donations, sponsorships, mergers and acquisitions, and human resources.

We regularly provide risk-oriented and target group-specific compliance and anti-corruption training. Employees can also obtain advice on compliance matters and on conduct based on our values and in line with the law on the AskMe advice portal.

Despite all precautions, we are not always able to prevent breaches of law or violations of regulations at the Company. Our TellMe whistleblower portal enables employees and external third parties to report potential breaches of compliance to the Compliance unit fully confidentially. In 2022, 81 compliance-related tip-offs were submitted via the TellMe portal (prior year: 87 tip-offs). Over the course of the year, 39 of these were confirmed to be cases of misconduct and dealt with accordingly. Within the scope of the legal framework available to us, we systematically pursue all tip-offs, including those that reach us via other channels, and implement commensurate sanctions in compliance with the relevant statutory provisions. We have introduced a Group-wide reporting process to control and monitor these activities.



With our Supplier Code of Conduct as an integral component of our General Terms and Conditions for Purchasing, we obligate our suppliers to, among other elements, refrain from any kind of corruption or conduct that could be interpreted as such. We select our business partners based on compliance criteria and, where required, conduct risk-oriented compliance business assessments. We have been offering regular e-learning training courses on compliance to our suppliers since 2014.

 SDG 17  RELATIONSHIPS

We will publish detailed information on our Supplier Code of Conduct in our 2022 CR Report at the end of March 2023.

Employees

Supporting people. Driving performance.

We at Deutsche Telekom are actively shaping the digitalization of society and, at the same time, we are engaged in the cultural and digital transformation of our own company. In many areas, environmental effects, new technologies, and business models entail fundamental changes to our working world and the skills we require for it. Our aspiration is to steer this transformation process and, in doing so, shift the focus of attention to people. As HR, our vision is to create the Best Team in the Industry, making a positive contribution to achieving our goal of becoming the Leading Digital Telco in line with our Group strategy. On the one hand, this requires us to safeguard the competitiveness of our organization, further enhance our attractiveness as an employer, and create a working environment capable of responding dynamically to changes in how we work today. On the other, it means strengthening a diverse and inclusive culture in which all employees have the opportunity to unlock their full potential.  SDG 5  EMPLOYEES Above and beyond this, we place a particular emphasis company-wide on building and extending urgently needed technical and digital skills to systematically shape up our company in readiness for the challenges that lie ahead.



Our people strategy is thus central to the implementation of our Group strategy. We bundle our programs and initiatives into the following **strategic priorities**, which we refined in the reporting year and present in the following using projects and measures for illustrative purposes.

1. Future-proof organization
2. Top tech and digital skills
3. Best place to work
4. Leadership in digital tomorrow

Our HR work based on the priorities

1. Future-proof organization

Our ambition for a future-proof organization is to build competitive structures which serve both our corporate targets and our workforce. That means aligning employment conditions with the market while systematically tapping efficiency potential by improving the quality of our HR products and services, and by automating and digitalizing processes in a targeted way. At the same time, we are taking steps to permanently adapt our structures, processes, and ways of working to changing market conditions.

Collective bargaining.  SDG 8  EMPLOYEES In the course of 2022, a total of 90 collective agreements were concluded with the trade unions for the Group entities in Germany covered by collective agreements. The “big” collective bargaining round for nine entities was successfully concluded in May 2022, despite the difficulties posed by rising inflation. Salary increases were negotiated for a total of 55,000 employees, ranging from 2.7 % in the higher pay groups to 3.1 % in the lower pay groups. Additionally, to cushion some of the effects wrought by high inflation, one-time payments of EUR 1,000 per employee were agreed for the lower and middle pay groups. The Group also promised to continue to provide training at a high level, and agreed to increase the number of planned hires for apprentices and students on dual study programs in the coming years to at least 1,900 in 2023 and 1,800 in 2024. We also successfully paved the way for combining units from the large B2B entities into a single company. We achieved this by harmonizing the collectively agreed pay and benefits across the B2B entities. In our national companies in Europe, too, we successfully concluded viable collective agreements in spite of the unusually high inflationary pressure. In addition to the collective pay increases, which were generally below the inflation rate, in some entities we agreed to make one-time payments to further cushion the impact, especially for employees in lower pay groups.

Transformation initiatives. It is our responsibility to place employees with the right skills in the right jobs and continue to support their development in line with future needs. In addition to the technology-induced transformation initiatives, the crisis-induced need to adapt, and the competition-induced staff restructuring, the decisive tools in achieving this goal are proactive total workforce management, the ongoing digitalization of our core processes, and investments in skilling.

In the reporting year we once again implemented essential transformation programs in the Group's business areas, for instance, in the B2B and B2C segments at Telekom Deutschland and the corporate customer segment at T-Systems International, as well as at Deutsche Telekom IT, the Group's internal IT service provider, and at Deutsche Telekom Services Europe, the Group's internal HR and financial service provider. Care was taken to implement all restructuring activities in a socially responsible manner.

The Group continued its efforts in the reporting year to build towards modern, fit-for-purpose organizational models, such as agile or flexible organizational structures to meet the different needs of business. Some 43,000 employees were working in agile or flexible structures as of 2022. For example, at Deutsche Telekom IT, global organizational structures such as chapters and agile workflows were continuously evolved with the goal of transforming internal IT into cross-border teams. A number of our national companies in Europe, too, including Magyar Telekom in Hungary, Slovak Telekom, and T-Mobile Polska, have already implemented agile working across broad swaths of the organization. Magyar Telekom extended its agile structures in the reporting year to include customer-facing employee groups. We thus not only promote customer-oriented and agile working methods, but are also able to respond quickly to change.

New employment prospects. The newly created unit next.JOB began its work in early 2022. next.JOB offers employees in Germany who are seeking a new professional challenge outside of the Group opportunities to enter the public sector. The placement service is available to both civil servants and non-civil servants and coordinates closely with the Group segments. Within just one year of launch, next.JOB has already facilitated 69 permanent placements, and continued to amplify and strengthen the extensive network of public-sector partners.

As a founding member of the initiative Allianz der Chancen in 2021, we are committed to actively shaping the transformation of the working world. Member organizations of the alliance are aligned with the goal of offering their employees economically and socially sustainable employment prospects across many different industries. The aim is to make people aware of new opportunities and lower the threshold for change: from one job to another. To this end, in the reporting year the companies rolled out their own internal projects and also formulated common areas of operation and recommendations for action for a new working world. One such measure is to support and reward employees who are willing to change jobs.

2. Top tech and digital skills



According to a Korn Ferry Institute study, by 2030 there will be 4.3 million vacant technical positions in the technology, media, and telecommunications industries. Yet we need highly skilled employees, many of whom with technical, digital, and IT profiles, to help us achieve our Group strategy. In times of shortages of skilled labor, this not only puts us in direct competition with our industry peers, but in particular with tech and software companies, as well as the automotive sector, all of which are desperately in need of technical and digital skills. We respond to this challenge by ramping up our investments in recruiting, developing, and retaining talents with the requisite skills. Our efforts are bearing fruit: in 2022 we increased the percentage of digital experts within our workforce at the Group to 19.7 %. This figure is significantly in excess of our original target of 17 % by 2024.

Employer brand. Competition on the labor market continues to intensify, especially in the IT and tech field. The employer market is turning into an employee market, as employers are now in a tug-of-war for talent on a global stage and across multiple industries. In parallel, the needs and expectations of this sought-after target group have changed – a development that was further heightened by the experiences from the coronavirus pandemic. Not only are these talents becoming more and more demanding, but other topics like flexible working, innovation, and new technologies are also gaining in importance.

We have realigned our employer branding strategy and employer value proposition (EVP) with the goal of further strengthening our position as an international, attractive employer for top tech and digital talents. Working together with tech talents as part of an iterative process, we carefully developed the content to ensure that the new employer branding strategy reflects their needs and expectations as well as our Group strategy. Our international employer branding campaign "Question today, create tomorrow." profiles current employees and invites talents to join us in questioning the status quo and to find the answers for the future together. Using messages tailored to specific audiences, an eye-catching look and feel, and a strong content strategy, all of which build on the strategic pillars of the new EVP, we help IT experts to discover career opportunities at Deutsche Telekom on various social media channels. The campaign is gradually being rolled out to the national companies through the first quarter of 2023.

Further targeted recruitment drives are also being implemented alongside the international employer branding campaign. We deploy a broad spectrum of HR marketing measures oriented to specific target groups with the goal of filling vacancies with the ideal candidates as rapidly as possible. Above and beyond this, we developed a new strategy focusing on university partnerships, and expanded existing cooperations with strategic partners in order to generate attention among a young target audience. We also remain committed to existing partnerships, including with Femtec, with the goal of attracting women into STEM professions at Deutsche Telekom.



A strong employer brand pays off: following its win in the previous year, Deutsche Telekom has once again won the Institute of Research & Data Aggregation's Leading Employer Award 2023. Our efforts to tailor our communication to specific target audiences are also bearing fruit: we were ranked #1 in Potentialpark's 2022 Azubi Communication Study and #2 in its Talent Communication study. Deutsche Telekom AG took the top spot in the NetFed HR Benchmark study. Our national companies also received accolades for their appeal as employers: for example, T-Mobile Austria received the Kurier seal of quality "Favorite Employer 2022," PwC named our Hungarian subsidiary Magyar Telekom the most attractive employer in the telecommunications and media industries, while our national company in the Czech Republic, T-Mobile Czech Republic, won the prize for top employer in the telecommunications sector.

Talent attraction. In 2022, despite the tense situation on the labor market, we attracted around 12,000 new employees (outside of the United States). Germany accounted for the largest share of these new hires, with around 2,700, followed by India, with around 2,000. In Germany, we won over 190 new employees in the fourth quarter of 2022 alone, most of whom are technicians working on the fiber-optic build-out. T-Mobile US recruited over 22,000 new employees in the reporting year. We welcomed 1,671 new apprentices and dual students in Germany, a high percentage of whom with technical, digital, and IT profiles. 53 young employees took us up on the opportunity to join one of our year-long orientation programs. We won the HR Excellence Award in 2022 for our Discover MINT program, which gives young people the option to try out a dual study course in the STEM field. In 2022, Capital magazine validated our keen efforts to advance young employees working at our company and offer them opportunities for success by ranking us "Germany's best training provider" in the categories "Vocational training" and "Dual studies."  

We value direct and personal contact, so we attend careers fairs, networking sessions, and other events. Our employees are crucial to attracting talents on a personal level, and in recognition of this in 2022 we launched #ExpertsHireExperts, a program which rewards the successful recommendation of employees with a EUR 2,500 bonus. This new program has already resulted in over 200 new employees for our Company. We also utilize new and innovative recruitment activities to target specific platforms, such as events in the metaverse, and use artificial intelligence. Our international active sourcing team uses targeted searches to find and directly approach highly experienced individuals. In 2022, the team inspired around 500 IT/tech candidates to apply for roles within the Group.

In addition to using a blend of traditional and innovative approaches to recruitment, our goal is to further strengthen our position as a global employer. With this in mind, in 2022 we began to build further T-Hubs in Europe, which combine a cross-segment concept with an attractive location strategy to unlock access to additional employee markets. We have created a cross-segment home for top tech and digital talents at new sites in Spain and Greece, and are currently also piloting the T-Hub approach in Poland. We offer these talents an attractive work environment, inspiring projects and leaders, and cross-segment training and career opportunities.

In 2022, T-Mobile US' onboarding program Being Un-carrier provided support for over 1,800 new employees and their managers in the form of optimized communication, online resources, live orientation sessions, and special benefit offerings, as well as in respect of diversity, equity, and inclusion. In the third quarter of 2022, T-Mobile US launched its New Leader Onboarding program developed especially for employees taking on leadership roles, whether as new hires or as a result of internal promotions. Since its launch, the program has already supported almost 190 new managers by providing targeted communication, online resources, and live orientation sessions.

Learning initiatives and offerings.   A central focus of our HR activities is on establishing and designing learning initiatives and offerings. We provide comprehensive training programs tailored to the business needs of the individual segments and complemented by focused horizontal Group offerings. Here, too, there is a clear emphasis on providing targeted support for employees undergoing technical and digital skilling and upskilling. Of particular relevance for us are the following profiles: DevOps, software and cloud engineers; solution architects and designers; and data scientists. We provide learning initiatives, guided learning journeys, and phased training programs for these profiles to facilitate reskilling and upskilling. In the first stage of this "learning ecosystem," the foundation is laid for the acquisition of digital skills: internationally available Explorer Journeys provide employees with initial insights into and knowledge in the fields of software development, artificial intelligence, data analytics, digital marketing, and user experience (UX). The program has attracted over 11,000 employees since it was launched in 2020. The second stage, known as Career Shifter, focuses on the software developer profile and allows us to address employees coming from minimal or zero IT backgrounds and reskill them into one of the most sought-after technical profiles. In the third stage, specialists with expertise in specific fields take center stage: here, the aim is to expand their expertise and strengthen their existing knowledge through the "good to great" pillar of their learning system. In 2022, following championing by the local HR teams and business areas in the segments, three learning journeys were incorporated in this stage and made available to all employees globally. Over 1,200 employees have already taken part in the first global version of the program.

In 2022, we took our “youlearn” learning culture initiative, introduced in 2019, to the next level and dovetailed it more effectively with our Group strategy. With the theme “Time to focus on tech & digital skills,” youlearn was closely oriented to the acquisition of technical and digital skills – successfully so: in the reporting year, employees in Germany and our national companies in Europe invested a total of 3.8 million learning hours under this program, of which 46.6 % were specifically devoted to technical and digital skills.



With a digital learning rate of around 79 %, digital learning is firmly established as a learning tool at Deutsche Telekom. Over 178,000 employees can take advantage of a whole range of digital and state-of-the-art learning offerings provided on the intelligent learning platform Percipio, dubbed the “Netflix of learning,” and through the integration of education platforms such as Coursera, a provider of digital further-training courses offered by top-ranking universities. The 2018 employee initiative Learning from Experts (LEX) has since become the largest peer-to-peer learning community at Deutsche Telekom and contributes immensely to informal learning. In 2022, experts shared their knowledge with other colleagues in over 5,390 online LEX sessions. Technical and digital skills were also the focus of the 2022 youlearn days, a global and digital learning event at Deutsche Telekom. With more than 5,400 registered participants from 29 countries, event participation was up by 10 % against last year, putting it yet again at an all-time high.



Due to the successful launch of levelUP!NextGeneration in 2019, we not only offered the program again in 2022 in digital format, but went one step further and substantially expanded the scope. While still a program for (future) leaders, it is now also suitable for tech and digital experts who have no ambitions to solid-line leadership. This move has transformed this former dedicated leadership skilling program into a program which supports a variety of career paths within the Group. A total of almost 750 employees from across the globe, including around 400 (prospective) managers and just under 350 tech and digital experts from 22 countries, completed the four-month skilling program. Its primary focus is on teaching innovative, inspirational, and tangible leadership topics and skills relating to digitalization and technology. Example topics include ambidextrous leadership, which places equal emphasis on innovation and efficiency; leading in an agile work environment; and managing complexity. Complementary elective modules aim to meet personal development needs. levelUP!NextGeneration also helps us strengthen and encourage intragroup and cross-segment collaboration.

Our T-Mobile US employees devoted a total of 5.7 million hours of their time to learning through a learning management tool. In addition, the Magenta University at T-Mobile US acts as a central support hub, empowering employees to make the most of their abilities, take advantage of career opportunities, expand their leadership skills, and strengthen their commitment to diversity, equity, and inclusion.

Employee development and skilling. We have laid the foundation for the necessary skill transformation by creating instruments including the Global Job Architecture (GJA), strategic HR planning, and strategic skill management. The GJA simplifies existing function structures and consolidates them in future-proof job profiles. Our strategic HR planning takes changing market conditions into account to plot the right course for targeted investment in the skills that will be needed going forward. Skill management is supported by a digital tool to pinpoint where personal skills are present or lacking, and development plans are continuously adapted by means of tailored training programs. Over 31,000 employees in the Group successfully went through the skill management process in 2022.

WeGrow, our modern performance management system that enables ongoing development dialog between managers and employees, also focuses on our employees’ personal development. This blend of strategic HR tools establishes a systemic basis for providing our employees with targeted upskilling and reskilling.

T-Mobile US has identified nine core development skills and underlying behaviors which it calls “values in action.” These values in action are crucial to achieving the mission, vision, and strategy of our U.S. subsidiary, and in the United States we offer evaluations, development, and resources tailored to each of these values. T-Mobile US also offers access to learning platforms like Percipio and Franklin Covey, empowering thousands of learners to acquire skills to meet their exact needs. In certain business areas, such as Digital, Enterprise Technology Solutions, and T-Mobile for Business and Consumer, T-Mobile US is developing role-based training to support strategic outcomes within its organization.  

As part of “values in action,” T-Mobile US offered targeted upskilling opportunities focusing on digital-first approaches and digital fluency, including a live discussion with the Chief Digital Officer of T-Mobile US, podcasts, resources, and other curated learning content and offerings. The security-first culture at T-Mobile US allows us to create an environment in which employees can acquire and strengthen security-related knowledge together. All employees also receive training on the basics of cybersecurity. The Be Cyber Smart program collates and teaches content ranging from digital literacy to topics including physical security, phishing, malware, password management, data privacy, and much more besides.  

3. Best place to work

It is our strategic goal to create a motivating work environment where all employees can live up to their full potential. We strive not only to drive forward technical solutions to shape the new, hybrid working worlds, but also to create an inclusive environment and a culture of trust and responsibility that unites all employees in pursuit of a common corporate purpose. In the reporting year, we once again aligned various initiatives with this goal.

Culture. 🏠 SDG 8 👥 EMPLOYEES We believe that our culture is Deutsche Telekom's DNA and an essential factor in safeguarding our long-term success. Building on the strong foundation of our Guiding Principles, corporate culture must also reflect the changing needs of customers and employees. For this reason, we understand culture to be a constantly evolving process. At Deutsche Telekom, we therefore also talk about our "living culture." Our Guiding Principles act as our compass, leading us to reflect on our behavior on a daily basis and helping us to make the right decisions. We use the Living Culture day and the Telekom Team Award each year to devote attention to this subject in a special setting. Under the theme "The Power of We," this year's Living Culture day took place for the first time at a central location outside Germany, namely Vienna. More than 30 countries took part, with over 5,000 teams and participants watching the live stream of the event. There was a strong social media presence on external networks, with 64,000 posts, as well as comments and likes. Our internal communication platform YAM registered 60,000 views. The Telekom Team Award is an international award with six categories, one for each of our Guiding Principles, aimed at recognizing outstanding performance as a team. In 2022, a total of 18 winning teams were chosen from among 261 entries from 20 countries. Between October and December, some 13,000 employees around the world used an online tool to vote on the final order of the winners.

Our six Guiding Principles





Diversity, equity, and inclusion. 👥 SDG 5 👥 EMPLOYEES Fostering diversity, equity, and inclusion is an integral part of who we are and how we see ourselves. We support the different diversity dimensions such as age, national and ethnic origin, gender and gender identity, physical and mental abilities, religion and beliefs, sexual orientation, or social background. We firmly believe that this also increases our corporate success, because we consider diverse teams to be a driver of innovation. In respect of gender diversity, our goal of increasing the percentage of women in management positions to 30 % across the Group (excluding T-Mobile US) by 2025 still applies. With women occupying 50 % (December 31, 2021: 45 %) of positions on the Supervisory Board and 37.5 % (December 31, 2021: 37.5 %) of positions on the Board of Management of Deutsche Telekom AG at the end of 2022, we have already exceeded this target in these boards. Across the Group (including T-Mobile US), the proportion of women in middle and upper management stood at 28.1 % at the end of 2022 (December 31, 2021: 27.3 %). To ensure we also reach our target in these management levels, we have worked with the different business segments to draw up concrete implementation plans. Specific measures are to be agreed aimed at increasing diversity in management teams depending on the situation in the respective segment, to be discussed by management on a regular basis. Diversity is particularly relevant in the context of our succession planning and recruitment activities.



T-Mobile US, too, strives to safeguard and further build on the diversity within its workforce in respect of gender, age, and national origin. Our U.S. subsidiary demonstrates its commitment to diversity through a whole range of initiatives, such as Next Tech Diversity, Women in Tech, the Returnship Program, Accessibility Initiatives, and the McKinsey Executive Leadership Program to name a few. T-Mobile US also founded six Employee Resource Groups celebrating its employees' rich diversity and heritage: Women & Allies Network, Veterans & Allies Network, Pride, Multigenerational Network, Multicultural Alliance, and the Accessibility Community.



Numerous additional actions and products further support our efforts to achieve greater diversity within the Company to make it an inclusive workplace for all. The international implementation of a revised Group policy on Diversity, Equity and Inclusion (DE&I) in 2021 laid the foundation for a shared framework of values which we continued to actively develop in the reporting year by way of our Group Inclusion Agreement and the Action Plan 2.0. This framework helps to support and safeguard compliance with our diversity values in all decision-making activities and actions at all Group levels. We sent a further signal, including externally, of our commitment to diversity and inclusion with the publication of the Transgender Handbook which contains information for all employees. It aims not only to increase transgender visibility and awareness, but also to offer practical support and guidance. Various international and segment-specific initiatives, too, show how we stand together for diversity, including #strongerTogether at T-Systems International in 14 countries, or employee-led communities such as the Women's Hub at Magyar Telekom. For the first time ever in the reporting year, in order to make the impact of our actions measurable and transparent, we added questions on employees' perception of equity and participation.

The successful implementation of the Global Talent Hub promotes the targeted placing of talents within our succession management process in all dimensions of diversity, e.g., gender, age, and nationality. Likewise, we actively support the career aspirations of women with the successful implementation of programs for the advancement of women including Action For Leadership with Nokia and UN Women in 2022. We also raise employee awareness through tailored training courses on topics such as unconscious bias, racism, and transgender issues, and we encourage employees to reflect on these.



For further information on the Global Talent Hub, please refer to the section "[Talent development](#)."

Shares2You.   We strive to give all employees the opportunity to participate in the success of our business while also fostering an entrepreneurial culture, and to this end we once again offered our Shares2You share program for employees in 2022. In the reporting year, Deutsche Telekom AG ran the Shares2You program for a second time under which employees can acquire shares in Deutsche Telekom AG up to an amount of EUR 1,000. For every two shares they purchase, they receive another share at no cost. All shares received in this way must be held for a minimum of four years. The program was also rolled out internationally in the reporting year to three national companies in the Czech Republic and Slovakia. A total of 1,263 employees of these three companies took part, investing an aggregate amount of just under EUR 1.2 million. In Germany, the second wave of the program began in October 2022 in participating German Group entities: 36,648 employees registered for the program, requesting to invest a total of over EUR 34.6 million. The shares are set to be issued in early 2023.

New work & hybrid working.   Once the pandemic is over, we will continue to actively shape the transition to a hybrid working world and to provide our employees with comprehensive support as they make this journey. We have provided Group-wide collaboration tools to give our employees greater flexibility to structure their daily work schedules and to choose their physical workplace, and to collaborate even better across units and borders. We believe that a nuanced approach both for and within the segments provides the best basis for taking the variety of different business needs into account. Not only that, but it gives managers the opportunity to draw up hybrid working models with their teams giving equal consideration to the diverse employee groups and team structures. In the reporting year we thus prioritized the idea of combining "the best of both worlds": greater flexibility and autonomy through mobile working in combination with personal encounters in the office as the basis for identification and innovation. For example, we invested in transforming our offices into places of encounter and supported and motivated our employees to see each other in person again with measures like the T for Togetherness campaign. We also held the employee festival AWAK3 in June 2022 with this particular goal in mind. AWAK3 was an international festival at which employees could meet up with colleagues to see live concerts, play sports, and participate in workshops on innovative business topics and sustainability. The success of our activities is reflected, once again, in extremely high employee satisfaction and a consistently high level of employer attractiveness.

Employee satisfaction.   Our engagement score, which is our measure of employee satisfaction, is calculated from data collected by the employee survey conducted every two years (excluding T-Mobile US). We also conduct pulse surveys twice per year – or once in employee survey years – to obtain feedback from our employees. The most recent pulse survey, conducted in November 2022, returned a high engagement score of 78 points (2021: 77 points). With employee participation of 76 % (2021: 80 %), the results in many areas, such as Goals (93 %; 2021: 92 %), Strengths (90 %; 2021: 88 %), Purpose (86 %; 2021: 86 %), and Information (86 %; 2021: 86 %), were among the highest ever. The question on Mood or Satisfaction remains at the very high level of 81 % (2021: 80 %) following a significant increase to around this level during the coronavirus pandemic. To allow for qualitative answers, the survey included a free-text box in which employees could suggest things that would reinforce their commitment to their work. Questions were also asked on the Group. The highest values were recorded for the new topic added in 2022: No Discrimination & Safe Space (92 %); as well as for the topics Guiding Principles (91 %; 2021: 90 %) and Digital Collaboration (86 %; 2021: 86 %). Several initiatives are in place to further enhance employee satisfaction.

T-Mobile US held separate employee surveys in March, June, and September 2022. The survey covers a broad spectrum of subjects designed to measure employee commitment and the corporate culture. Of the employees who were invited to take part in the most recent survey in September 2022, 54 % responded. The results show a high level of employee satisfaction: 86 % (2021: 86 %) said that their own team offers an inclusive working environment which is accepted by all colleagues, 79 % (2021: 83 %) are proud to work for their company, and 76 % (2021: 80 %) would recommend T-Mobile US to others as an attractive employer. This is further borne out by the numerous accolades awarded to T-Mobile US over the last few years for its status as a preferred employer. Like in 2021, the U.S. subsidiary was included on the Forbes list of America's Best Employers. T-Mobile US made it onto the Fortune 100 list of best employers for the fifth time. And for the tenth time in succession, T-Mobile US achieved a top score of 100 in the Human Rights Campaign Corporate Equality Index for its commitment to building an inclusive workplace for lesbian, gay, bisexual, transgender, and queer employees.

Employee health.   Our health management strategy is designed to maintain and promote our employees' health and performance. We view occupational health and safety legislation as minimum requirements. Our corporate culture encourages our employees to take responsibility for their own health. When the Covid-induced restrictions were lifted in 2022, the health rate in Germany declined to 93.8 % (including long-term illnesses), i.e., it returned to the pre-pandemic level. The Group applies a coordinated hygiene concept based on the recommendations of the Robert Koch Institute. Employees are regularly provided with information on dealing with the coronavirus. Since fall 2022, the focus of our vaccination offerings has shifted back to flu shots.

We continue to support our employees and managers by providing them with classroom and online formats covering topics such as leadership, remote collaboration, and preserving and enhancing resilience, and by offering confidential, anonymous advice on psychosocial problems via a dedicated helpline. In the 2022 financial year, a support service was set up for international employees affected by the war in Ukraine.



For further information on emergency aid for Ukraine provided in the Group, please refer to the section "[Combined non-financial statement.](#)"

The health promotion program also includes courses on nutrition, exercise, and relaxation (stress prevention, mindfulness). In 2022, the Federal Occupational Health Association (Bundesverband Betriebliches Gesundheitsmanagement – BBGM) awarded us a Best Practice Award in Germany for our #ausruhezeichen campaign to promote healthy sleep and recovery. On an international level, our OTE group in Greece received six awards relating to health and safety. These included accolades for promoting a culture of health and safety in areas of daily life for our employees through the long-running action program "Living better." Awards were also received for initiatives, for example, on health and well-being, behavioral risks, and best crisis management.



In July 2021, T-Mobile US was the first mobile provider to receive the WELL Health-Safety seal, which it also received in 2022. The seal is awarded based on a global assessment which ensures that spaces and sites comply with science-backed health and safety standards.



4. Leadership in digital tomorrow

Further developing the digital and tech skills of our managers is a crucial step towards successfully implementing our Group strategy. Not only that, but a modern leadership culture based on diversity and humanity is essential both for our Company's long-term commercial success and for attracting and retaining talents. We therefore continued to pursue this strategic priority during the reporting year through the continual evolution of our leadership culture and through a range of leadership skilling programs.

Leadership culture.   We believe that the ongoing development of our leadership culture within the Group has a positive effect on our employees and thus a direct impact on our success as a company. This is further borne out by the findings from the most recent survey, which identifies team attractiveness and a culture of trust as key factors driving employee satisfaction. Essentially, this culture must also be directly palpable in interpersonal interactions between managers and employees. In particular after a period with a lack of social interaction and contact during the coronavirus pandemic, we invested more in enabling personal encounters and in strengthening communities. One example of our efforts to facilitate dialog and networking, and to jointly drive forward the digital transformation, is the SpeedUP! days, which we held for the first time in 2022. This two-day event offered managers and top talents the opportunity to attend workshops and speak directly with experts to extend their digital skills, hone their thought processes, and learn new methodologies.

We value highly an environment in which our managers feel part of a leadership team. This drives us to invest not only in the transfer of skills and the teaching of methodologies, but also in strengthening our leadership communities, such as the Telekom Transformation Team (T³). T³ is a group of around 250 top-level managers from the Board of Management and the business leader team, as well as top talents from across all functions and segments of Deutsche Telekom. Its role, alongside members' regular line responsibilities, is to drive forward the transformation of the organization. We support this community year-round with a combination of broad-based leadership programs and individual measures. Our current range of programs – EQ Master, Mountain Wisdom, Limitless, and Leadership Presence – are specifically designed to enable our top-level managers to unlock their full leadership potential. The T³ community also meets up once a year for an event dedicated to enhancing leadership skills and the understanding of the organization. This year, the event theme was “Trailblazers” to reflect qualities such as frontier spirit and the courage to take on pioneering roles within change processes. Another initiative in 2022 was the first digital format for the T³ community, called De-Mystifying Digital. A series of sessions of 60 to 90 minutes were offered covering data science, cloud computing, digital talent magnets, Web3, metaverse, and cybersecurity. A recording was made available on the internal leadership skilling platform levelUP!

Leadership skilling.   In the age of digitalization, managers must possess skills and methods that differ greatly from those needed in the analog world. That is why, since the start of the reporting year, we have been supporting not just our executives with levelUP!, our innovative digital further-training service; but we have extended the offering of training for successful leadership in the digital age to all managers. As a result, the number of managers registered on the platform grew to over 5,000 in 2022. levelUP! comprises modules that can be combined individually as required. Knowledge is shared primarily via interactive, digital learning formats in combination with classroom training and self-study materials. In 2022, our levelUP! offerings focused on the Leading Digital program. Eight skills were identified as the most important digital leadership skills at Deutsche Telekom: 1. Artificial intelligence, 2. Data science and analysis, 3. Cloud computing, 4. Computer hardware and networking, 5. Cyber and application security, 6. Computational thinking, 7. Software and programming languages, and 8. Collaboration and productivity software. levelUP! aims to teach these specific skills in a way that ensures all managers have a basic understanding of these key digital topics. The program comprises three phases: 1. Understanding the digital mindset, 2. Learning the eight key digital skills (beginner and advanced level), and 3. Applying and transferring the newly acquired skills and knowledge into practice.

T-Mobile US offers a range of leadership skilling programs to promote a variety of talents and empower employees to achieve success at every stage of their career. Leadership development is supported by way of intensive and needs-based learning experiences in a portfolio that covers everything from onboarding and development within the role, to transition/top talent programs, coaching, assessments, and mentoring. Our goal is to offer programs which champion courageous, inspirational, target-oriented leaders who are capable of getting the best out of themselves and others.  

Talent development. On our journey to becoming the Leading Digital Telco, a key priority for us are the talents in our Global Talent Hub (GTH). These talents are future managers and executives, and we help prepare them for the challenges ahead. The GTH consists of two pipelines: the “executive-ready pipeline” with no more than 200 talents at any one time who are immediately ready for and seeking an executive position within the company, and the new “raw diamond pipeline” with a maximum of 100 talents who have demonstrated leadership potential early on in their careers and are being guided under the talent program towards an executive position by way of a relevant career stepping stone. At present, 237 talents are being actively supported as part of this process. In both talent pools, we focus on employees in all positions who are striving to pursue a global, cross-segment, cross-border career within Deutsche Telekom. We also evaluate these talents with respect to their digital skills and mindset. Our talents are developed with an equal focus on their personal career advancement and on our ability to fill key positions within the Group with GTH talents faster. Specially trained talent brokers are invaluable in this context: they draw up personal development plans together with the talents, discuss career paths, facilitate networking among talents, raise their visibility, and actively recommend them for executive positions when a vacancy arises. In 2022, 57 Global Talent Hub participants signed an executive contract, i.e., 20 % of executive positions were filled with GTH talents in the reporting year (excluding T-Mobile US).

Alongside the central initiatives, our operating segments also offer their own talent programs which specifically prepare employees to take on their first leadership duties within the segment. For example, the Europe operating segment runs a “30 under 30” program offering targeted support for very young leadership talents. The Germany segment offers a springboard program called OSD Talent Reise to prepare talents for the next phase of their career journey. This program teaches leadership skills in addition to focusing on expert careers.

Headcount development

The Group's headcount fell by 4.5 % compared with the end of the prior year. In our Germany operating segment, the number of employees declined by 4.5 % against year-end 2021, largely due to the take-up of socially responsible instruments as part of staff restructuring activities, such as dedicated retirement and phased retirement. The total number of employees in the United States operating segment decreased by 5.6 %. The decline against year-end 2021 is primarily due to intentional headcount rationalization to manage costs. In our Europe operating segment, the headcount was down by 3.5 % compared with the end of the prior year, in particular in Greece, Slovakia, Poland, and Croatia. The headcount in our Systems Solutions operating segment was up 4.6 % against the end of 2021. The effect on headcount of our efficiency enhancement measures was more than offset by increased staff requirements in our growth areas. In the Group Development operating segment, the sharp year-on-year decrease in headcount of 69.0 % was mainly due to the sale of T-Mobile Netherlands as of March 31, 2022. The headcount in the Group Headquarters & Group Services segment was down 5.9 % compared with the end of 2021, mainly due to the ongoing staff restructuring in the Technology and Innovation unit, primarily in connection with a transformation program at Deutsche Telekom IT, and continued staff restructuring at Vivento.

Workforce statistics

Headcount development

	Dec. 31, 2022	Dec. 31, 2021	Change	Change %	Dec. 31, 2020	
FTEs in the Group	206,759	216,528	(9,769)	(4.5)	226,291	
Of which: Deutsche Telekom AG	12,302	13,897	(1,595)	(11.5)	15,374	
Of which: civil servants (in Germany, with an active service relationship)	8,381	9,653	(1,272)	(13.2)	10,583	
Germany operating segment ^a	59,014	61,768	(2,754)	(4.5)	67,956	
United States operating segment	67,088	71,094	(4,006)	(5.6)	71,303	
Europe operating segment	34,083	35,319	(1,236)	(3.5)	41,272	
Systems Solutions operating segment	27,392	26,175	1,217	4.6	26,490	
Group Development operating segment	828	2,674	(1,846)	(69.0)	2,684	
Of which: GD Towers	762	775	(13)	(1.7)	744	
Group Headquarters & Group Services ^a	18,353	19,498	(1,145)	(5.9)	16,585	
Breakdown by geographic area						
Germany	81,469	85,160	(3,691)	(4.3)	89,032	
International	125,290	131,368	(6,078)	(4.6)	137,258	
Of which: other EU member states	48,144	50,005	(1,861)	(3.7)	55,816	
Of which: rest of Europe	2,087	2,066	21	1.0	2,168	
Of which: North America	67,312	71,337	(4,025)	(5.6)	71,617	
Of which: rest of world	7,747	7,960	(213)	(2.7)	7,658	
Natural attrition^b	5.9	5.2	0.7	13.5	3.9	
Of which: Germany	2.5	2.1	0.4	19.0	2.0	
Of which: international	10.7	9.3	1.4	15.1	6.6	
Productivity trend^c						
Net revenue per employee	thousands of €	542	488	54	11.1	448

^a As part of reorganization measures at Deutsche Telekom IT, around 3.7 thousand employees were reassigned from the Germany operating segment to the Technology and Innovation unit in the Group Headquarters & Group Services segment effective January 1, 2021. Prior-year comparatives were not adjusted.

^b Excluding T-Mobile US.

^c Based on the average number of employees.

Personnel costs



millions of €

	2022	2021	Change	Change %	2020
Personnel costs in the Group	19,446	18,463	983	5.3	18,853
Of which: Germany	8,389	8,461	(72)	(0.9)	8,764
Of which: international	11,057	10,002	1,055	10.5	10,089
Special factors ^a	1,367	906	461	50.9	1,836
Personnel costs in the Group (adjusted for special factors)	18,080	17,556	524	3.0	17,017
Net revenue	114,413	107,811	6,602	6.1	100,139
Adjusted personnel cost ratio	%	15.8	16.3		17.0
Personnel costs at Deutsche Telekom AG under German GAAP	1,936	2,176	(240)	(11.0)	2,291

^a Expenses for staff-related measures.

Technology and innovation

T&I strategy: digital transformation and human centrality





At Deutsche Telekom, innovation means creating the best possible (digital) customer experience on the basis of our multiple award-winning network – now and in the future. We believe our core competency consists in integrating the individual components (such as hardware and software in the mobile and fixed networks) so that, in conjunction with our own network and IT infrastructure and supported by partner companies, we can guarantee the best customer experience at a reasonable price with resilient and future-proof technology. This is precisely the task of our Technology and Innovation Board of Management department, which works in close cooperation with our operating segments. The Technology and Innovation Board of Management department is where we combine and integrate our Technology, Innovation, IT, and Security functions. This structure will allow us to meet the demands of the future network generation and the associated requirements not only of our customers, but also of our employees, our partners, and our shareholders – in terms of network security and sustainability, too. Our Group strategy Leading Digital Telco applies not only to high-speed broadband access, but also to responsible network production. That is an economic and ecological necessity, especially given growing cloudification, increasing data traffic, and the rising number and concentration of active components in our network.  




We are thus in a position both to enable Deutsche Telekom’s current business and at the same time to shape the future. We are convinced that we can reliably deliver results, constantly develop product, industry, and technological innovations, and simultaneously hone and refine our ways of working. The following examples, which illustrate our improved network infrastructure, strong technology partnerships, and innovative services and customer experience, highlight how we want to safeguard and maintain our technology leadership among European network operators through technological progress and innovation.



- **Delivery Innovation:** Technology and Innovation is a supplier and service provider for the Group. As such, it is particularly important that we consistently meet our obligations. That means conscientiously delivering our services, leveraging the synergies offered by centralized production, and working cost efficiently. At the same time, we can also shape the future, e.g., by promoting agile working methods to make our production future-proof.
- **Experience Innovation:** We are Deutsche Telekom’s central innovation unit. Constantly pursuing innovations that benefit our customers, the Group, and all other stakeholders is our task and our obligation – but we also consider it an expression of the freedom we enjoy. Our technological innovations form the underpinnings for this. We work in close cooperation with the segments and with external partner companies in order to meet our customers’ requirements and to create the innovations this calls for.
- **Capability Innovation:** Continuing to turn Deutsche Telekom into a software-based company entails transforming our capabilities on an ongoing basis. We want to recognize the need for future changes in our Company and to be able to handle them as they arise. Changes become entrenched especially when accompanied by cultural innovation in the shape of skills transformation and the systematic retraining and further training of our employees as software engineers, AI experts, and network architects. By the end of 2022, we had given some 2,000 of our employees intensive training in topics relevant for the future, such as software development, artificial intelligence (AI), and DevOps, as well as in agile methods, in 16 international Skill Academies.  

Innovation priorities

Innovations can be produced everywhere. That is why it is important to ensure we pursue our innovation activities at an intragroup level and that they are aligned with our strategy. Our interconnected innovation areas provide a holistic, Group-wide framework for this. In the reporting year, we further built on our activities in the prior year to evolve our innovation priorities in close coordination with the operating segments.

- **Connectivity:** We are developing our router operating system for the digital future – with enhanced cloud-based connectivity management and service quality, a superior customer experience and standardized operation via app, PC, or television, and value-added applications such as child protection functions, home security, predictive maintenance, and troubleshooting.   This new router generation is based on a globally scalable reference system (Reference Design Kit, RDK), which we are constantly fine-tuning together with other leading telecommunications providers. Rollout began in Austria and Poland in the reporting year, and we aim to bring the new router generation to all markets in Europe by 2024. A core element of connectivity management is the home-network check software feature, which is available both in service apps in Germany such as MeinMagenta and via the TV interface, and which provides for new, context-based customer interaction to optimize service and troubleshoot problems in home networks.
- **Smart home:** We continue to cloudify and refine our smart home offerings, with the aim of making the ecosystem future-proof. A key component of this is the cloud-native MagentaZuhause app, which has been available to download as a full version since February 2022. Users can connect all of their smart home devices with the app and enable personalized use by each member of the household, as well as access and administer services including Wi-Fi.  

- **Service orchestration in the connected home:** We want to improve the customer experience at home by ensuring the easy, seamless, uniform, uncomplicated interaction of all Deutsche Telekom's services and devices, and by enabling services from selected partners. To link up our different services we are relying on the HomeOS orchestration platform we have developed in-house. The MagentaZuhause app is the first customer touchpoint to use the HomeOS platform. It combines TV, smart home, router management, and MagentaCloud functions, with more features being added regularly. The goal is to continue integrating these functions into the MagentaTV menu ever more seamlessly. MagentaZuhause was available in over 4 million German households as of the end of 2022.
- **Magenta Voice:** With smart voice control (also known as voicification), we want to further enhance the way our customers experience our services, and to simplify interaction with technology and devices. To achieve this, we are constantly evolving our voice platform, winning over new partners, and integrating voice control into additional products and services such as television and the MeinMagenta and MagentaZuhause (SmartHome) apps, with the aim of offering our customers a comprehensive convergent application space. Ongoing functionality enhancements have resulted in rising customer usage and satisfaction levels. In parallel, we continue to work towards realizing B2B solutions, such as a scheduling assistant for business customers.
- **AI One Conversation:** By integrating artificial intelligence, we will ensure that our products and services remain competitive into the future.   The focus of our activities in the reporting year continued to be on scaling up our AI-based Frag Magenta digital assistants for chat and telephone. The aim of these digital assistants is to further personalize all customer interactions across all points of contact. In November 2022, German computer magazine Computer Bild and market statistics company Statista named our Frag Magenta chatbot the best German chatbot for 2022. We also continue to personalize our marketing and sales activities so as to be able to offer our customers tailored solutions that are based on our previous interactions with them.
- **Network differentiation:** In this innovation program, we are working on developments to disaggregate, cloudify, and automate our network production making increased use of data and artificial intelligence. This new approach aims to both improve the customer experience considerably and increase flexibility and scalability, while simultaneously lowering costs. We will achieve this with software solutions for automated error detection, analysis, and correction based on machine learning, among other solutions. Together with other leading network operators as part of the O-RAN Alliance, we are working towards defining a global standard for an open, intelligent, virtualized, and interoperable radio access network. At the i14y lab in Berlin, which is operated by a consortium of leading European telcos within the open space hosted by Deutsche Telekom, start-ups, suppliers, operators, and system integrators test and validate the integration of new, disaggregated components to safeguard the interoperability of individual components and modules in a growing ecosystem. This enables us to further expand our multi-vendor strategy to increasingly reduce our dependence on individual vendors and thus safeguard our technology leadership. The innovative approach to network production unlocks new opportunities to directly monetize the network, for instance, via network application programming interfaces (APIs). To this end, under the umbrella of the Linux Foundation and the GSMA, Deutsche Telekom collaborated with other network operators, leading manufacturers, cloud providers, and app developers to launch CAMARA – the Telco Global API Alliance initiative in February 2022. CAMARA's goal is to identify the needs of the developer community and, on this basis, to specify and implement open, globally standardized APIs to enable simple, uniform, codable access to network functionalities across all telecommunication providers.
- **Standalone 5G:** Up to now, Deutsche Telekom has used 5G non-standalone (5G NSA) in which the existing 4G core network continues to provide the technical backbone. The 5G radio access network is now being integrated with the new 5G core network to create 5G standalone (5G SA). This core network is the source of crucial innovations and benefits, because it removes the need for terminal devices to connect to the 4G and 5G networks in parallel. The 5G core network is based on a cloud platform with virtualized core network functions, which will enable new applications such as network slicing. Network slices are discrete logical networks with individual, application-specific characteristics such as bandwidth, latency, or security, which are created on the same shared physical infrastructure. They allow applications always to be provided with the appropriate (virtual) network. Network slices could therefore be used, for example, for applications where bandwidth and latency are critical, such as augmented/virtual reality; for communication among authorities where security is critical; or for secure, high-availability applications for business customers. For instance, in collaboration with BMW Group, Valeo, Ericsson, and Qualcomm Technologies, we presented a world-first demonstration of automated driving applications supported by network slicing with controlled network features for Quality of Service (QoS). In trials, the partners explored how network slicing with different QoS features supports automotive use case scenarios.
- **Data & analytics:** This is an innovation area in which we are driving the implementation of Group-wide principles and tools for data processing and analytics. Our uniform data model will enhance and accelerate our data analysis and enable us to easily transpose successful applications to new markets and countries using cloud-based deployment architecture. As the privacy and integrity of our customers' data is our top priority, customer and network data remain with the respective national companies  . We have also set in motion a comprehensive data transformation program based partially on a cloud architecture and the principle of data democratization.

- **Sustainable Telco:**   Our newest innovation area is devoted to making the telecommunications industry more sustainable. With a view to safeguarding long-term access to affordable green energy, our main focus is on energy efficiency and energy resilience. This includes location-based usage of regenerative energy with dynamic energy storage management for load balancing, as well as AI-powered, load-dependent energy-saving mechanisms. In the reporting year, we successfully delivered the proof of concept required for energy efficiency management in the mobile network of one of our national companies, and in several other national companies have begun piloting the implementation of partially self-sufficient energy supply. We also put the first model sites with photovoltaic systems, wind power, and in some cases, fuel cell technology into operation.

Three-pronged innovation strategy


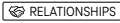
We set ourselves apart from the competition and generate growth in three ways:


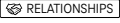
1. In-house developments



In 2022, we continued to pursue our current innovation topics, developed new products, and simultaneously ramped up our transformation into a more agile company.



- **Delivery Innovation:** Artificial intelligence drives internal digitalization, e.g., in campaign management or with our Frag Magenta chatbot. With the rollout of our RDK router operating system developed in-house, the integration of service orchestration, and voice-operated smart home and media applications, we offer an integrated, customer-first home experience which we will continue to evolve going forward.
- **Capability Innovation:** In the wake of our transformation into an agile company, more than 95 % of our employees now work in an agile set-up, which is also having a positive impact on IT delivery. For example, over 88 % of our IT deployments now take place outside of the traditional waterfall development model.


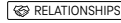
T-Labs – as part of Group Technology – is the research and development unit of Deutsche Telekom, focusing on translating new technology trends into tangible results for Deutsche Telekom’s innovation portfolio. Co-research is the key mission for the T-Labs team, with the vision of achieving a superior customer experience and exploring disruptive technologies for future telecommunications infrastructures. Our latest research activities focus on the networks of the future and artificial intelligence, spatial computing, decentralized systems, and network security and digital twins. From our base in Berlin, we cooperate with multiple universities around the world.



Active cooperation with universities and academia in general has the goal of turning ideas into action and has been at the heart of T-Labs’ mission from the outset. As a trusted interface between academia and business, we provide fast access to scientific innovation and R&D, enabling various co-creation formations.   Together with Deutsche Telekom’s HR team, T-Labs’ active promotion of cooperation with universities also serves a Group-wide function, by also attracting talents and strengthening brand awareness of the company in the R&D community.

In November 2022, T-Labs launched the third edition of T Challenge, a global innovation competition run in conjunction with T-Mobile US for start-ups, developers, and research institutions. This time around, the focus is on finding innovative solutions and approaches based on Web3 technologies for a human-centered internet. Experts predict that Web3, the next generation of the internet, has the potential to break the stronghold that current centralized web services have and give control back to the users. This human-centered internet could mark a paradigm shift for the business models of many digital applications.   As part of T Challenge, T-Labs and T-Mobile US collaborate closely with intragroup stakeholders to develop specific solutions for Deutsche Telekom.

Future networks & AI.   Telecommunications networks belong to the most complex structures in modern industrial societies. The techno-economic evolution of these networks follows the principles of cloudification, disaggregation, and automation, making increased use of data and artificial intelligence. Consequently, we research data-driven algorithmic approaches for optimized operation and preemptive cybersecurity in telecommunications systems. T-Labs’ research activities continue to focus on Open RAN, cybersecurity, quantum technology, and next-generation (6G) networks. 6G in particular is not only an evolution of the current state of technology, but at the same time represents fundamental progress spurred on by extensive research in the fields of AI, sustainability, and new services. In the reporting year, Deutsche Telekom took over the lead for the 6G NeXt (Native Extensions for XR Technologies) research project, part of the “6G industry projects for research into integrated systems and sub-technologies for 6th generation mobile communications” program funded by Germany’s Federal Ministry of Education and Research. Nine partners from industry and academia are involved in the program, with the goal of investigating 6G requirements for real-time and demanding XR applications, such as anti-collision systems and holographic 3D communication. The first 6G networks are expected to go live in 2030.

Spatial computing. Spatial computing is focused on enabling advanced user interaction at higher standards for various customer segments by using next-generation XR technologies and human-computer interfaces. Our activities in smart media will provide a seamless and consistent experience when using future Deutsche Telekom products and services. Our mission as innovators, researchers, and developers is to create an exciting, immersive world for our customers and to lay the foundation for an energy-efficient future metaverse. A perfect example of this is our Eco Streaming project to investigate the energy consumption of components along our media supply chain.   Moreover, in collaboration with a range of partners, the national research project 6G NeXt was launched under which use cases were defined and implemented with network requirements that go well beyond the possibilities offered by 5G networks.

Decentralized systems.   This research area deals with the distribution of authority over data among multiple players with the aim of making intermediaries obsolete. Corporations and individuals alike have recognized the immense potential of distributed ledger technologies. These enable the decentralization, transparency, and integrity of data, while significantly increasing efficiency at the same time. The goal is to enable trust without dependence on single trusted parties. Some applied use cases within this area are digital identities, digital business processes, digital asset management, and crypto-economics.

Network security & digital twin.   This research area focuses on creating a scientific toolkit for studying the most pressing issues of future telecommunication networks: security, efficiency, stability, and complexity management. With the advent of disaggregated network architectures (Open RAN), traditional deterministic engineering approaches are no longer possible. As a consequence, high-definition and realistic digital representation and simulation tools (digital twins) are needed in order to provide a new basis for optimizing design and operation. Working together with partners from academia and industry, our research in this field contributes to advancing areas such as the modeling of energy consumption in Open RAN architectures and the detection of logical conflicts in network management. Security research for future telecommunication networks faces a number of tasks: the extraction of reliable, rapid analyses from ever-growing data volumes, the rapid recognition of perceptible threats, and the recommendation of appropriate action. We do this by developing AI algorithms which take structured texts (logs, etc.) and extract data to look for patterns that could indicate threats and attack vectors. Implicit methods such as these are far superior to conventional deterministic detection. This field is also the subject of two major projects funded by the Federal Republic: Open Lab and CampusOS, both of which are investigating the combined issues of network simulation and security research.

2. Partnerships

We draw on the expertise and abilities of our partners in order to implement the digital transformation. For example, we rely on the tremendous innovative energy coming out of Silicon Valley, Israel, China, Korea, India, Germany, and other innovation hotspots across the globe. The following are some examples of successful partnerships:

- We have expanded our strategic investment in Israeli software company **Teridion** and further strengthened the partnership. Teridion is a leading vendor of cloud-based connectivity platforms. Businesses can dynamically build cloud-hosted connectivity on the Teridion Liquid Network scaled to their needs and available worldwide.
- In collaboration with **Telefónica, Orange, Vodafone** and the software developer **Matsuko**, our goal is to bring holographic communication to the mass market. If hologram telephony is to be realized in the near future and available to everyone at all times, it must work with all widely available smartphones in combination with a VR headset.
- We also further strengthened our partnership with video-conferencing and unified communications provider **Zoom**. We provide a range of solutions for communications from a single source in Germany and in other European national companies.
- Furthermore, we extended our partnership with **RingCentral**, under which we jointly offer an end-to-end solution for communication and collaboration. The new product is called RingCentral X powered by Telekom and empowers small businesses, SMEs, and major corporations alike to implement remote working. RingCentral, as a leading vendor of global communication solutions for businesses, unifies team messaging, video meetings, cloud telephony, and service centers on one single platform. The comprehensive Unified Communications as a Service (UCaaS) solution is delivered to customers over Deutsche Telekom's mobile and fixed networks.

3. Start-up funding

As Deutsche Telekom's leading start-up program, the **hubraum** tech incubator puts external start-ups in touch with the relevant business units in our Group, so that together they can offer innovative products to consumers and business customers. To this end, hubraum provides the start-ups with seed financing from its own investment fund and targeted innovation programs geared to our strategic growth areas and technologies. A range of further innovation programs, some building on existing programs, is also planned. The programs likewise focus on topics such as networks, 5G, augmented reality, and sustainability.

Since founding hubraum in 2012, we have established a strategic investment portfolio of over 30 companies and worked together closely with more than 350 further start-ups from Europe and Israel in areas such as the real-time gigabit society (e.g., 5G and edge cloud), the smart data economy (e.g., AI and process automation), and the Internet of Things (e.g., NB-IoT and Industry 4.0). The hubraum campus in Berlin – with one of Europe's first 5G networks and edge cloud infrastructure – and the campus in Krakow offer start-ups not only co-working office space, but also exclusive access to our Group's networks, product platforms, and test data to help them build up their businesses faster. The hubraum 5G prototyping initiative continued in 2021 with the 5G Early Access Program, a – hitherto unique – 5G testing environment operated by Deutsche Telekom on the hubraum campus in Berlin. Under the program, the environment was made available year-round to start-ups and hyperscalers to test 5G APIs directly on a fully functional 5G standalone core network. These activities were continued in 2022, and will be expanded further in 2023 with a focus on developer relations in collaboration with T-Mobile US. The interaction with developers and its systematic analysis by the hubraum research team make a valuable contribution to the ongoing evolution of our API products.

The hubraum 5G prototyping initiative was also accompanied by other programs and initiatives in 2022:

- **Developer Relations:** Developers currently have difficulty integrating telecommunications services into their applications, as the current network architecture does not support it. To overcome this problem, hubraum developed a portal for access to network APIs and strengthened its efforts to form a group of experts for this topic. The aim is to enable businesses to offer their products and services, including telecommunications services, easily.
- **Snapdragon Spaces:** In mid-2022, hubraum launched the Snapdragon Spaces Program in collaboration with Qualcomm and T-Mobile US to provide eleven start-ups with app development support. The focus was on augmented reality: apps for entertainment & gaming, education & training, and fitness & health. The program outcomes were presented at the Deutsche Telekom XR & Metaverse event in Bonn in November 2022.
- **hub4industry:** The consortium was founded in 2019 with funds from the Polish Ministry of Economic Development and Technology. hubraum is establishing the factory of the future in an on-site showroom, with a 4G/5G campus network based on typical single RAN architecture and an EPC network. In 2022, consortium members hubraum and T-Mobile Polska qualified for the EU project European Digital Innovation Hubs, which was set up to support digital transformation in small and medium-sized enterprises in Poland.

The following start-ups received investment funding from us in the reporting year:

- **inStreamly** (Poland) operates an interactive, scalable platform that places ad content with thousands of micro-streamers simultaneously.
- **Hype Labs** (United States, Portugal) is developing a decentralized telecommunications platform on which individual devices can connect up to form a mesh network with no need for internet or infrastructure.
- **tagSpace** (Australia) offers a platform for users to place augmented reality content at any location, no coding required.

We also founded **Venture Studio** – a joint venture of hubraum and Founders Factory – to invest in start-ups which are active in certain other areas of relevance to us.

Innovation governance

Innovation cycles are getting shorter and shorter. As a result, we must be agile and flexible in how we manage and budget our innovation projects. We orient ourselves toward the best-practice approaches used by innovative start-ups and successful companies, and to the latest findings from research and academia.

Portfolio and Innovation Board

The Portfolio & Innovation Board (PIB) plays a central role in managing our innovations. This Group-wide body ensures that we set the right priorities by identifying and selecting the innovation projects for our Group and deciding on the method of implementation. Our efforts are guided primarily by the Group strategy and we create full transparency across the Group regarding our investments in innovation.

Corporate Innovation Fund

Our Corporate Innovation Fund (CIF) is managed centrally by the PIB. Similar to a venture capital approach, the CIF offers all business and product ideas generated within the Group a flexible and results-oriented form of funding for a specific project phase. The provision of an innovation budget allows us, for example, to fund new innovation projects at short notice and with little red tape. Such financing is granted independently of annual planning periods, and therefore intensifies our focus on market and customer requirements. The only condition is that the new business and product ideas solve pertinent customer problems and support our strategy.

T&I Investment Committee

We established the Investment Committee to speed up investment decisions on our multi-year innovation priorities. Its objective is to act like an (internal) venture capitalist. The Investment Committee allocates funding according to success, similar to the approach used for start-ups and among venture capital investors, whereby raising new funding from capital investors is dependent on the venture's performance. This gives us the flexibility we need when developing innovation topics and focuses efforts on success. Funding is made available for the next project phase only when specific outcomes that are relevant to our customers are achieved.

Deutsche Telekom Capital Partners



The investment management group Deutsche Telekom Capital Partners invests on behalf of Deutsche Telekom and other investors. DTCP invests in venture and growth capital and acquires companies in Europe, the United States, and Israel. Its investments are both financially and strategically motivated. DTCP also plays an active role in establishing business relations between the innovative portfolio companies, Deutsche Telekom, and other partner corporations, in order to create added value for all sides.

Advised by the T-Capital business area at Deutsche Telekom Capital Partners, Deutsche Telekom – through the strategic investment fund Telekom Innovation Pool (TIP) – invests in and promotes business start-ups that have a strategic focus and support the Group's long-term targets through collaboration with the respective business areas. The goal is to actively pursue long-term innovations for the Group, particularly in the areas of wireless infrastructure, cloud native computing, decentralized services, Internet of Things connectivity, and digital transformation. In 2022, TIP made four new corporate investments: Helium/Nova Labs (alternative network infrastructure for 5G and LoRa WAN), Proximo (multi-cloud networking, automated application connectivity), Kinexon (IoT, precise object positioning, tracking, asset connectivity), and Ponto (regulated payment networking infrastructure).

Patent portfolio

Patents are gaining more and more significance in the telecommunications industry. Our patent strategy has to keep pace with the constant evolution of market players and fields of activity. On the one hand, our Group's scope for action must be maintained. On the other, we want to protect the results of our own research and development, and to use these in cooperation and partnership with other companies. National and international patent rights are vital for these types of activity. We are therefore strongly dedicated to developing, granting, and maintaining our own patents. In the reporting year, Deutsche Telekom held a total of around 8,200 patent rights. We are firmly committed to expanding our patent portfolio, taking relevant current and future technologies into account. This will secure the value of our innovations in a dynamic world and bolster the Group's competitiveness.

Investment in research and development

Research and development (R&D) expenditure includes pre-production research and development, such as the search for alternative products, processes, systems, and services.   By contrast, we do not class as R&D expenditure the costs of developing system and user software which is designed to improve productivity and make our business processes more effective. R&D expenditure in the Deutsche Telekom Group amounted to EUR 30 million in 2022 (2021: EUR 33 million). As the parent company, Deutsche Telekom AG bears part of the Group's research and development expenditure. At EUR 15 million, this was on a par with the level in the prior year. In 2022, our Group's investments in internally generated intangible assets to be capitalized were also up year-on-year at EUR 702 million compared with EUR 612 million for the previous year. These investments predominantly relate to internally developed software, mainly in our Group Headquarters & Group Services segment. In 2022, Deutsche Telekom AG's investments in internally generated intangible assets to be capitalized were EUR 28 million compared with EUR 29 million for the previous year.

Forecast^a

Statement by the Board of Management on the expected development of the Group

We are proving to be an anchor of stability in difficult times. We successfully continued our growth course on both sides of the Atlantic again in 2022 in a challenging macroeconomic environment. We want to continue the strong development of the last few years and lead the Group into the future with sustainable growth. In the reporting year again significant transactions have been closed and reorganizations completed, and we took further steps to secure control of T-Mobile US. We want to use this strong starting position going forwards to underpin our success with solid financial growth rates, further extend our technology leadership with the best state-of-the-art networks, and thereby contribute to the implementation of our Leading Digital Telco strategy.

This ties in with our financial targets for the period through 2024, which we communicated at our [Capital Markets Day](#) in May 2021. From 2020 through 2024, we aim to achieve the following compound annual growth rates (CAGR) or targets for our key financial performance indicators:

- **Revenue** is expected to increase by an average of 1 to 2 %; **service revenue** by an average of 3 to 4 %.
- **Adjusted EBITDA AL** is expected to increase by 3 to 5 % on average; adjusted core EBITDA AL, i.e., adjusted EBITDA AL excluding revenues from terminal equipment leases in the United States, is expected to increase by 5 to 6 % on average.
- **Free cash flow AL** (before dividend payments and spectrum investment) is expected to increase steadily, exceeding EUR 18 billion^b in 2024.
- **Earnings per share** (adjusted for special factors) is expected to exceed EUR 1.75^b in 2024.

For 2023, we expect to post the following year-on-year trends, assuming a comparable consolidated group and constant exchange rates^b:

- **Revenue** is likely to increase slightly in 2023. We expect **service revenue** to increase.
- **Adjusted EBITDA AL** is expected to increase by around 4 % in 2023 to around EUR 40.8 billion. In the reporting year, adjusted EBITDA AL came in at EUR 40.2 billion; on a like-for-like basis, i.e., adjusted for comparability with the adjusted EBITDA AL forecast for 2023, adjusted EBITDA AL stood at EUR 39.3 billion. We expect adjusted core EBITDA AL to increase significantly by around 7 % to around EUR 40.5 billion in 2023.
- **Free cash flow AL** is expected to grow to over EUR 16 billion in 2023, i.e., up by more than 40 %. Free cash flow AL in 2022 was EUR 11.5 billion; on a like-for-like basis, i.e., adjusted for comparability with the free cash flow AL forecast for 2023, free cash flow AL stood at EUR 11.2 billion.
- We are anticipating **earnings per share** (adjusted for special factors) of over EUR 1.60 in 2023.

Economic outlook

The general global growth forecasts brightened somewhat toward the turn of the year 2022/23. In its economic forecast from January 2023, the International Monetary Fund (IMF) expects global economic growth of 2.9 % in 2023. We expect to see moderate growth in our core markets for full-year 2023. In the United States, the extensive tightening of monetary policy is expected to put pressure on economic development in the first half of 2023, but also to significantly slow down the upward trend in consumer prices. In Europe, energy prices are expected to fall only slowly over the year ahead, which will further increase production costs with a likely gradual knock-on effect on consumer prices. A fall in demand will also ease supply-side shortages, which will remain at a high level. In 2024, the economy is expected to slowly return to normal.

^a The forecasts contain forward-looking statements that reflect management's current views with respect to future events. Words such as "assume," "anticipate," "believe," "estimate," "expect," "intend," "may," "could," "plan," "project," "should," "want," and similar expressions identify forward-looking statements. These forward-looking statements include statements on the expected development of revenue, service revenue, EBIT, EBITDA after leases, adjusted EBITDA after leases, adjusted core EBITDA after leases, ROCE, cash capex, and free cash flow after leases. Such statements are subject to risks and uncertainties, such as an economic downturn in Europe or North America, changes in exchange and interest rates, the outcome of disputes in which Deutsche Telekom is involved, and competitive and regulatory developments. Some uncertainties or other imponderables that might influence Deutsche Telekom's ability to achieve its objectives, are described in the "Risk and opportunities management" section of the combined management report and in the "Disclaimer" at the end of the Annual Report. Should these or other uncertainties and imponderables materialize, or the assumptions underlying any of these statements prove incorrect, the actual results may be materially different from those expressed or implied by such statements. We do not guarantee that our forward-looking statements will prove correct. The forward-looking statements presented here are based on the future structure of the Group, without regard to significant acquisitions, disposals, business combinations, or joint ventures that may arise at a later date. These statements are made with respect to conditions as of the date of this document's publication. Without prejudice to existing obligations under capital market law, we do not intend, or assume any obligation, to update forward-looking statements.

^b When determining the targets for our key financial performance indicators, a U.S. dollar exchange rate of USD 1.14 was assumed at the Capital Markets Day. Our expectations for 2023 were determined based on the average U.S. dollar exchange rate for the 2022 financial year of USD 1.05.

The following table shows the expected GDP growth rate trends and the change in harmonized consumer prices in our most important markets for 2023 and 2024.

%	GDP for 2023 compared with 2022	GDP for 2024 compared with 2023	Consumer prices for 2023 compared with 2022	Consumer prices for 2024 compared with 2023
Germany	0.1	1.4	7.5	2.9
United States	1.4	1.0	3.4	2.3
Greece	1.0	2.0	6.0	2.4
Romania	1.8	2.2	10.2	6.8
Hungary	0.1	2.6	15.7	3.9
Poland	0.7	2.6	13.8	4.9
Czech Republic	0.1	1.8	9.5	3.5
Croatia	1.0	1.7	6.5	2.3
Slovakia	0.5	1.9	13.9	3.6
Austria	0.3	1.1	6.7	3.3

Sources: European Commission, November 2022; IMF, January 2023.

Expectations for the Group

Expectations up to 2024. We expect profitable growth to continue over the next two years. This will provide a sound basis for achieving our financial ambitions – as communicated at our Capital Markets Day in May 2021.

We expect our **financial performance indicators** to develop as follows in 2023 and 2024 on an organic basis, i.e., on a like-for-like basis with the prior year:

- We expect **revenue** to increase slightly both in 2023 and in 2024 on the back of the positive development of service revenue. The United States operating segment will be the primary driver of this trend, and we likewise expect revenue in this segment to grow slightly in both 2023 and 2024. In our Germany operating segment, we expect revenue to increase slightly in 2023 and to increase in 2024.
- **Service revenue** is projected to increase year-on-year in both 2023 and 2024. This trend will be influenced by the growth expected in the United States operating segment for 2023 and 2024.
- **Adjusted EBITDA AL** is expected to increase to around EUR 40.8 billion in 2023 and to increase substantially in 2024. Revenue and the realization of synergies from the business combination of T-Mobile US and Sprint will have a positive impact. Adjusted EBITDA AL will be negatively affected in particular in 2023 by the gradual withdrawal from the business model of terminal equipment leases in the United States, with revenues from terminal equipment leases being offset primarily by the depreciation of the capitalized terminal devices on the expenses side. Terminal equipment leases were a major pillar, in particular, at Sprint. In its place, marketing activities are set to shift increasingly toward the Equipment Installment Plan.
- We expect **adjusted core EBITDA AL** to increase substantially year-on-year in both 2023 and 2024, driven by the realization of synergies from the business combination of T-Mobile US and Sprint. Adjusted core EBITDA AL is distinguished by excluding revenues from terminal equipment leases in the United States from adjusted EBITDA AL, thereby presenting operational development undistorted by the withdrawal from the terminal equipment lease business. For this reason, we are adding adjusted core EBITDA AL to our financial performance indicators for the years of the withdrawal from the business model of terminal equipment leases in the United States for explanatory purposes.
- **Profit/loss from operations (EBIT)** is expected to increase substantially year-on-year in 2023 and to decline year-on-year in 2024. This development is attributable to the income from the sale of shares in GD Towers to be recognized as a special factor in 2023. At the same time, the figures for 2023 will also show the positive effects arising from the reduction in integration costs in connection with the business combination of T-Mobile US and Sprint. EBIT expected for 2024 will benefit from the positive trend in adjusted core EBITDA AL, but will decline year-on-year on account of the large positive special factor recorded in 2023.
- **ROCE** is expected to increase significantly in 2023 and decrease in 2024 due to the effects described for the development of EBIT. Hence, we expect to achieve our target for ROCE to be higher than the expected weighted average cost of capital (WACC) again from 2023, following an increased burden until 2022 from the integration costs arising from the business combination of T-Mobile US and Sprint.
- Our investments – measured in terms of **cash capex** (before spectrum investments) – are expected to decline to around EUR 16.8 billion in 2023 on account of the largely completed network integration in connection with the business combination with Sprint in the United States. For 2024 we expect to report a stable cash capex development (before spectrum investment). We want to continue investing heavily in building out our network infrastructure in Germany, the United States, and Europe in order to safeguard our technology leadership in the long term.
- **Free cash flow AL** (before dividend payments and spectrum investment) is expected to increase significantly to over EUR 16 billion in 2023. We also expect a strong increase in free cash flow AL in 2024 due to sound operational development.

- At the end of 2022, we had the following **ratings**: BBB with a positive outlook (Standard & Poor's – S&P); BBB+ with a stable outlook (Fitch); and Baa1 with a stable outlook (Moody's). Maintaining an investment grade rating within the A– to BBB range will enable us to retain access to the international capital markets and is thus a key component of our finance strategy.
- We expect **earnings per share** (adjusted for special factors) of over EUR 1.60 in 2023, after positive factors had been recorded in 2022, including measurement effects from the forward transaction to hedge the price of acquiring T-Mobile US shares in the future, and the amortization and subsequent measurement of stock options to buy shares in T-Mobile US, as well as income from the measurement of provisions due to the significant rise in the interest rates. We expect to see adjusted earnings per share increase sharply in 2024.

Our debt issuance program puts us in a position to place issues in the international capital markets at short notice, while our commercial paper program enables us to issue short-term papers in the money market. T-Mobile US is being refinanced primarily in the form of senior unsecured notes.

Bonds and loans in the total amount of EUR 8.1 billion and EUR 6.3 billion will fall due for repayment in 2023 and 2024, respectively, of which around EUR 4.7 billion and EUR 3.2 billion, respectively, relate to T-Mobile US. A number of T-Mobile US bonds include issuer termination rights. If the premature termination and refinancing of these bonds result in economic gains, this could give rise to further refinancing requirements. We plan to issue new bonds in various currencies. The exact financing transactions will depend on developments in the international finance markets. We also intend to cover part of our liquidity requirements by issuing commercial paper. In early 2023, Deutsche Telekom prematurely bought back own bonds with a volume of EUR 2.7 billion with terms ending between 2023 and 2027. This resulted, among other factors, in a reduction in maturities in 2023 and 2024 by EUR 0.7 billion and EUR 0.6 billion, respectively.

We want to continue leveraging economies of scale and synergies through suitable partnerships or appropriate acquisitions in our footprint markets. There are no plans, however, to expand into emerging markets. We will continue to subject our existing partnerships and equity investments to regular strategic reassessments with a view to maximizing the value of our Company.

If the economic situation should deteriorate or any unforeseen state or regulatory interventions arise, the expectations expressed here may change accordingly. Given the level of macroeconomic uncertainty, we also cannot rule out the possibility of deviations.

The following tables summarize the forecasts for our financial and non-financial performance indicators up to 2024. They assume a comparable consolidated group and constant exchange rates, i.e., an organic basis. In order to create a comparable basis with the forecast period, the results of the 2022 financial year have been adjusted for significant changes in the composition of the Group which have been included in the planning, and for changes in the organizational structure in the pro forma presentation. Thus, the expectations for 2023 are based on the pro forma figures for 2022; expectations for 2024 are based on expectations for 2023. To indicate the intensity and trends of our qualified comparative forecasts, we apply the following aspects: strong decrease, decrease, slight decrease, stable trend, slight increase, increase, strong increase.

Financial performance indicators

		Results in 2022	Pro forma in 2022 ^a	Expectations for 2023 ^b	Expectations for 2024 ^b
Net revenue					
Group	billions of €	114.4	113.7	slight increase	slight increase
Germany	billions of €	24.5	24.7	slight increase	increase
United States (in local currency)	billions of \$	79.3	79.3	slight increase	slight increase
Europe	billions of €	11.2	11.2	increase	slight increase
Systems Solutions	billions of €	3.8	3.7	stable trend	slight increase
Service revenue					
Group	billions of €	91.9	91.6	increase	increase
Germany	billions of €	21.5	21.7	slight increase	slight increase
United States (in local currency)	billions of \$	61.2	61.2	increase	increase
Europe	billions of €	9.3	9.3	increase	slight increase
Systems Solutions	billions of €	3.7	3.6	stable trend	slight increase
EBITDA AL	billions of €	36.0	34.2	strong increase	decrease
EBITDA AL (adjusted for special factors)					
Group	billions of €	40.2	39.3	around 40.8	strong increase
Germany	billions of €	9.8	9.9	10.2	increase
United States (in local currency)	billions of \$	27.0	27.0	28.4	strong increase
Europe	billions of €	4.0	4.0	4.0	increase
Systems Solutions	billions of €	0.3	0.3	0.3	increase
Core EBITDA AL (adjusted for special factors)^c					
Group	billions of €	38.9	38.0	strong increase	strong increase
United States (in local currency)	billions of \$	25.5	25.5	strong increase	strong increase
Profit (loss) from operations (EBIT)	billions of €	16.2	14.8	strong increase	decrease
ROCE	%	4.5		strong increase	decrease
Cash capex (before spectrum investment)					
Group	billions of €	21.0	20.7	16.8	stable trend
Germany	billions of €	4.4	4.4	slight increase	slight increase
United States (in local currency)	billions of \$	14.0	14.0	strong decrease	stable trend
Europe	billions of €	1.8	1.8	stable trend	stable trend
Systems Solutions	billions of €	0.2	0.2	stable trend	stable trend
Free cash flow AL (before dividend payments and spectrum investment)	billions of €	11.5	11.2	> 16	strong increase
Rating					
Standard & Poor's, Fitch		BBB, BBB+		from A- to BBB	from A- to BBB
Moody's		Baa1		from A3 to Baa2	from A3 to Baa2
Other					
Dividend per share ^{d, e}	€	0.70		Dividend payout ratio of 40 to 60 % of EPS (adjusted for special factors), minimum € 0.60	Dividend payout ratio of 40 to 60 % of EPS (adjusted for special factors), minimum € 0.60
Earnings per share (adjusted for special factors)	€	1.83		> 1.60	strong increase
Equity ratio	%	29.2		25 to 35	25 to 35
Relative debt		3.07x ^f		> 2.75x ^f	around 2.75x ^f

^a Significant changes in the organizational structure and in the composition of the Group (e.g., the sale of shares in GD Towers – exclusion of 12 months for pro forma 2022 and expectations – and the sale of T-Mobile Netherlands).

^b On a comparable basis.

^c Adjusted core EBITDA AL is distinguished by excluding revenue from terminal equipment leases in the United States from adjusted EBITDA AL, thereby presenting operational development without distortion. For this reason, we are adding adjusted core EBITDA AL to our financial performance indicators for the years of the withdrawal from the business model of terminal equipment leases in the United States for explanatory purposes.

^d The expectation regarding the dividend per share refers to the respective financial year indicated.

^e Subject to approval by the relevant bodies and the fulfillment of other legal requirements.

^f Deviation from the target range of 2.25 – 2.75x for a short period due to the business combination of T-Mobile US and Sprint until year-end 2024.

For further information on the expected development of the financial performance indicators of our operating segments, please refer to the section “Expectations for the operating segments.”

Non-financial performance indicators

		Results in 2022	Pro forma in 2022 ^a	Expectations for 2023	Expectations for 2024
Group					
Customer satisfaction (TRI*M index)		76.0		slight increase	slight increase
Employee satisfaction (engagement score)		78		stable trend	stable trend
Energy consumption ^b	GWh	13,253		slight increase	increase
Of which: excluding T-Mobile US	GWh	4,704		slight increase	slight increase
CO ₂ emissions (Scope 1 and 2) ^c	kt CO ₂ e	233		increase	decrease
Of which: excluding T-Mobile US	kt CO ₂ e	179		increase	decrease
Fixed-network and mobile customers					
Germany					
Mobile customers	millions	54.2	54.2	increase	increase
Fixed-network lines	millions	17.4	17.4	stable trend	stable trend
Retail broadband lines	millions	14.7	14.7	slight increase	slight increase
Television (IPTV, satellite)	millions	4.1	4.1	increase	increase
United States					
Postpaid customers	millions	92.2	92.2	increase	increase
Prepaid customers	millions	21.4	21.4	slight increase	slight increase
Europe					
Mobile customers	millions	47.3	47.3	increase	slight increase
Fixed-network lines	millions	7.9	7.9	stable trend	stable trend
Broadband customers	millions	6.7	6.7	increase	increase
Television (IPTV, satellite, cable)	millions	4.1	4.1	increase	increase
Systems Solutions					
Order entry	billions of €	4.0	3.8	stable trend	slight increase

^a Significant changes in the organizational structure and in the composition of the Group included.

^b Energy consumption, mainly: electricity, fuel, other fossil fuels, district heating for buildings.

^c Calculated according to the market-based method of the Greenhouse Gas Protocol.

For further information on the expected development of the non-financial performance indicators of our operating segments, please refer to the section “Expectations for the operating segments.”

Our **customer satisfaction** – which is measured using the **TRI*M index** performance indicator – is expected to rise slightly in both 2023 and 2024 against the baseline recalculated for 2023. For the Germany and Systems Solutions operating segments in particular, the values achieved put us in a leading position compared to the relevant benchmark and we intend to maintain this position in 2023. We are aiming for a slight improvement in the Europe segment.

Having achieved a high level of 78 points – on a scale of 0 to 100 – on the **engagement score** in the 2022 pulse survey, and in view of the results of the surveys conducted in 2021, we expect the positive response of our employees regarding our Company to remain stable in the next surveys in 2023 and 2024.

We expect our **energy consumption** to increase slightly at Group level in 2023 and to increase in 2024. Excluding T-Mobile US, we expect a slight increase in both years. In 2023, we expect **CO₂ emissions** (Scope 1 and 2) to initially increase both at Group level and excluding T-Mobile US, followed by a decrease. Since 2021, 100 % of the electricity requirements for all Group units have been met from renewable sources. As such, the majority of emissions have been eliminated.

For further information on our ESG KPIs, please refer to the section “Combined non-financial statement.”

Our planning is based on the following exchange rates:

Currency		Exchange rate
Polish zloty	PLN	4.69
Czech koruna	CZK	24.56
Hungarian forint	HUF	391.12
U.S. dollar	USD	1.05

Expectations for Deutsche Telekom AG. The development of business at Deutsche Telekom AG, the Group's parent company, is reflected particularly in its service relationships with its subsidiaries, the results of the subsidiaries' domestic reporting units, and other income from subsidiaries, and from associated and related companies. In other words, our subsidiaries' results from operations and the opportunities and challenges they face are key factors shaping the future development of Deutsche Telekom AG's figures. Accordingly, in addition to our expectations for the Group, the expectations described on the following pages concerning the operating segments' revenue and earnings – such as strong competition, regulatory intervention, market and economic expectations, etc. – have an impact on our expectations concerning the development of Deutsche Telekom AG's future income after taxes.

Since 2021, subject to approval by the relevant bodies and the fulfillment of other legal requirements, the amount of the dividend is based on a dividend payout ratio of 40 to 60 % of adjusted earnings per share, with a lower limit fixed at EUR 0.60 per dividend-bearing share. For the 2022 financial year, we will propose a dividend of EUR 0.70 for each dividend-bearing share.

For the 2023 financial year, we expect an unappropriated net income for Deutsche Telekom AG that will allow the distribution of a dividend of 40 to 60 % of adjusted earnings per share.

Expectations for the operating segments

Below, we explain the market expectations and the expectations for the financial and non-financial performance indicators of our operating segments. We assume a comparable consolidated group and constant exchange rates for the development of our performance indicators.

| We presented more information on the expected development of the operating segments at our [Capital Markets Day](#) in May 2021.

Following the sale of T-Mobile Netherlands as of March 31, 2022 and 51.0 % of the shares in GD Towers as of February 1, 2023, our Group Development operating segment no longer makes a significant contribution to the expectations of the Group's significant performance indicators. For this reason our forecast does not provide a separate presentation of the figures for this segment or a corresponding explanation.

Germany

Following the increase in revenue in the German market for telecommunications services in the reporting year, the industry association Bitkom forecast further revenue growth in 2023, albeit at a slower pace. Despite disrupted supply chains due to the war in Ukraine and the persistent inflation that is encumbering economic development, demand for mobile and fixed-network-based communications remains high. Declines in revenue due to ongoing intense price competition, negative regulatory effects from reduced mobile termination rates, and the decline in traditional fixed-network telephony will be more than offset by still growing demand for mobile data volumes and faster connectivity in the consumer and business customer area. In the German mobile market, revenues are expected to increase by 3.1 % and service revenues by 1.9 % in 2023 (source: Analysys Mason). In the Germany fixed-network business including television, the number of broadband lines will continue to rise; revenues are expected to grow by 1.2 % (source: Analysys Mason).

Innovative, attractive rate plans and supplementary services – such as TV and streaming options, and smart-home services – are becoming increasingly important for our competitive position with consumers, while cloud services, security applications, and solutions for Industry 4.0 are gaining in significance with business customers. We set ourselves apart from other providers with technology leadership and our broad range of products and services. At our Sustainability Day in October 2022, we confirmed our priorities for climate neutrality, circular economy, diversity, and digital participation, as well as good corporate governance.

The mobile communications market in Germany is currently dominated by three providers, each with its own network infrastructure, deploying 4G/LTE and 5G technology to ensure that the majority of the population has access to mobile internet. In 2019, Drillisch Netz AG, a subsidiary of United Internet AG, acquired mobile spectrum and began to set up a fourth mobile network. At the end of 2022, three mobile sites were put into operation. As the build-out continues, infrastructure competition is expected to increase. Furthermore, competition from mobile providers without their own network infrastructure is also likely to increase further.

In mobile communications, we lead the market for network coverage – in terms of speed and customer experience: in its annual mobile network test, Connect magazine named Deutsche Telekom the clear winner, awarding the rating "outstanding" for the first time. As of the end of 2022, 94.8 % of the population in Germany were covered by Deutsche Telekom's 5G network. With the continued build-out, we want to further improve our network quality. To this end, we will increase network density and capacity further in both rural areas and in cities.

The market for fixed-network broadband hosts a large number of players with differing infrastructures – from national through to regional providers. We are assuming that competition from cable network operators will remain intense and that the number of providers who have their own fiber-optic networks will increase.

In the fixed network, we want to provide fiber-optic-based products to more and more customers. Our Germany-wide IP-based network achieves high transmission bandwidths of up to one gigabit per second. In order to always offer our customers competitive high-speed lines, we increasingly invest in digital infrastructure. We accelerated our FTTH rollout in the reporting year and now enable 5.4 million households to directly connect to our fiber-optic network. Our build-out will benefit both people in towns and cities and those in rural areas. We are set to maintain our rapid FTTH build-out pace over the coming years by building out on our own, but also through partnerships, with the addition of 2.5 to 3 million households per year. Our goal is to roll out fiber-optic lines to more than 10 million households and companies by the end of 2024. We will use a wide range of partnership models to increase the utilization rate of our broadband infrastructure by our own retail business as well as through partnerships with wholesale providers in broadband marketing.

The German TV market is saturated at around 38.8 million TV households (source: Statista). Nevertheless, we want to grow our TV customer base further, by providing a wide variety of entertainment “from a single source.” In order to offer our customers the best possible user experience, we are also engaging in partnerships, for example with RTL+, Disney+, Netflix, Prime Video, Sky/WOW, DAZN, and AppleTV+. In this way, MagentaTV combines multiple entertainment worlds in one. We broadcast all matches of the 2022 FIFA Soccer World Cup in Qatar exclusively and in UHD, including pre- and post-match coverage.

Our goal is to continue expanding our position as the leading integrated telecommunications provider in the German market by providing innovative and competitive products and services. To this end, we aim to further reduce the complexity of our products and processes through automation and digitalization initiatives. We want to deliver the best customer experience with perfect service. To this end, we invest systematically in our networks and the brand experience. We improve the service and shopping experience through our digital channels by creating more opportunities to offer customized and contextualized products and services. For our business customers, we position ourselves as the preferred partner for digitalization. We offer integrated portfolios for both small and large business customers as well as multinational corporations. From fixed network and mobile communications through to IT, we offer one-stop integrated solutions professionally and fast to provide our customers with optimum, sustainable support in a digital world.

We want to remain the market leader in Germany in terms of revenue over the coming years and extend our lead through rising service revenues. We are responding to our customers’ constantly growing demand for bandwidth and will continue to invest extensively in broadband networks, digital transformation, and outstanding customer service. In our broadband business, revenues are constantly growing and customer satisfaction levels rising, and we want to continue this growth trend again in 2023. We will improve customer satisfaction by actively evolving our mobile services (e.g., MeinMagenta app) and ensuring seamless service across all channels (e.g., web, hotline, shop). We want to turn our customers into fans and reward our existing customers in our new loyalty program Magenta Moments with exclusive Deutsche Telekom advantages, through services from our own portfolio, but also through partner deals and exclusive events.

In our Germany operating segment, we expect slight revenue growth in 2023 and a further increase in revenue in 2024. Our value drivers are growing mobile and broadband revenues (a result of the increased attractiveness of our own mobile brand), rising numbers of customers with high-speed lines, and B2B revenue growth, for example, thanks to the positive trend in IT and cloud business. We want to continue expanding our fiber-optic services, both by means of business models with wholesale products and through further partnerships.

Thanks to our excellent network quality and the progress we are making with fiber-optic build-out, we expect to see a further increase in 2023 and 2024 in the number of mobile customers as well as slight growth in our broadband lines, fueled by demand for TV and high-speed products. Our initiatives to digitalize IT solutions business for our business customers will continue to increase revenues from IT and cloud services, and from M2M/IoT business. In wholesale business, we expect sales volumes to fall overall, mainly due to the fact that our wholesale customers are migrating their retail customers to alternative cable and fiber-optic-based infrastructure. We nevertheless expect demand to remain high as a result of our partnerships with wholesale providers.

In each of the next two years, we expect to post year-on-year increases in earnings in our Germany operating segment. For 2023, we expect adjusted EBITDA AL to increase to around EUR 10.2 billion, driven in particular by high-value revenue growth and a simultaneous reduction in indirect costs, mainly through digitalization and automation. Our adjusted EBITDA AL is expected to rise further in 2024. We are forecasting a stable adjusted EBITDA AL margin for 2023 and 2024.

Our course is set for innovation and growth: While we will continue to consistently promote investments in new technologies with great intensity in the future, we will wind down legacy systems, cutting costs in the process. Over the coming years, we will focus our investments on building out a forward-looking fixed-network and mobile infrastructure (e.g., FTTH and 5G). Our aim here will be to close gaps in the network in rural areas and provide urban centers with the high bandwidth they require. We want to continue this rollout efficiently and, to this end, are participating in funding programs. We expect our capital expenditure (cash capex before spectrum investment) to increase slightly year-on-year in both 2023 and 2024.

United States

The overall U.S. ICT continued its posts-2020 upward swing in 2022. Growth continued in nearly all ICT sectors, including IT equipment and services, and total telecom infrastructure and services. Mobile voice and data services showed strong increase over 2021 levels, and total market growth, as well as individual sector growth, is expected at a steady clip through 2026 and after, depending on specific projections. (Sources: Mordor Intelligence, GSMA)

According to GSMA overall mobile revenues are expected to increase annually with continued subscriber growth, data consumption increases, and growth in the device market. Plan rates remain competitive. Cable can present an even greater competitive threat if they are able to leverage further its mid-band spectrum won in 2021 and 2022. For example, the Federal Communications Commission announced in January 2022, DISH spent over 7 billion US-\$ in the 3.45 band auction, winning 1,232 licenses in total.

Leading industry associations such as GSMA expect the U.S. to continue to lead global migration to 5G. The U.S. is in the midst of its second wave of 5G buildout and adoption. Further mid-band deployment has supported more robust 5G experiences, with 5G adoption continuing to grow in 2022. Fixed Wireless Access for home and enterprise has become the primary tech behind fixed broadband growth. 5G is also growing in the enterprise segment with wireless WAN to branch office locations and to serve ultra-mobile professions. By 2028, around 420 million 5G subs (for all North America) are expected, accounting for over 90 % of mobile subscriptions. GSMA expects over half of all mobile connections running on 5G networks by 2025, and Ericsson forecasts 90 % by 2027. T-Mobile US expanded its 5G network leadership, by reaching 325 million people, utilizing the 600 MHz spectrum holdings it acquired in April 2017. (Source: Ericsson Mobility Report)

Following the completion of the merger with Sprint, T-Mobile US hit the ground running with its profitable growth initiatives, carrying great momentum into 2023. T-Mobile US continues to focus on creating shareholder value and providing an unmatched combination of best network and value experience in the U.S. wireless industry. Key elements of the company's focus include consistently and profitably outgrowing the competition, unlocking the value of synergies faster and bigger than anticipated and making the necessary investments to position the company for long term success. T-Mobile US customer growth initiatives center on attracting and retaining a loyal customer base by providing plans that are simple, affordable and without unnecessary restrictions to deliver the best value in wireless. T-Mobile US further extends this winning formula by combining this best value proposition in the market with its leading 5G network experience.

T-Mobile US expects continued strong subscriber growth in 2023 through further expansion in underpenetrated growth vectors, such as smaller markets and rural areas, enterprise and high-speed internet, which helped fuel industry leading growth over the last few years while allowing T-Mobile US to deliver industry-best financial results. However, competitive pressures and unforeseen changes in the macroenvironment in the U.S. may affect the expected ability to attract and retain branded postpaid and prepay customers.

T-Mobile US expects a slight increase in total revenues in U.S. dollars in 2023 and an increase in 2024 driven by increasing service revenue growth primarily from postpaid account and ARPA growth offset by lower revenues in the wholesale base. Total revenues are expected to increase, albeit, at a slower pace than service revenues as 5G device upgrade rates slow resulting in decreases in installment device financing and lower lease revenues from a declining lease base.

For 2023 T-Mobile US expects adjusted EBITDA AL of 28.4 billion US-\$, and a strong increase in 2024. Adjusted EBITDA AL will be impacted by the continued transition from handset leasing to equipment installment plans for remaining Sprint customers, which is expected to be completed by the end of 2023. Revenue growth is expected to outpace increases in expense as T-Mobile US focuses on delivering customer growth and merger synergies driven by operating cost efficiencies and site decommissioning following its Sprint customer migration and network integration. However, investments to further unlock growth vectors, such as smaller markets and rural areas and enterprise, may impact adjusted EBITDA AL. Adjusted Core EBITDA AL, i.e., adjusted EBITDA AL excluding revenues from handset leasing, is expected to increase strongly in 2023 and 2024.

Excluding expenditures relating to spectrum, T-Mobile US reached peak levels of cash capex in 2022 from its accelerated network integration and the rapid pace of its 5G network deployment. The company expects a strong decrease in cash capex in 2023, reflecting greater capital efficiencies from its 5G network build and then a further slight decrease in 2024.

Europe

The economic development of the countries of our Europe operating segment deteriorated significantly in the reporting year due to the war in Ukraine and the associated macroeconomic impact, after a clear recovery had been observed at the end of 2021. Europe's heavy dependency on Russian energy resulted in sharp increases in commodity prices. As well as the general uncertainty on the markets, which mostly has a negative effect on the economy, economic outlooks are also coming under pressure from the current high rates of inflation in the EU. This renewed economic uncertainty could have a negative impact on household and business expenditure for telecommunications services and thus reduce in particular revenues from business customers, roaming, and the prepaid segment. The European Commission expects a further sharp rise in consumer prices in 2023. This trend is not expected to let up until the following year.

Analysys Mason forecasts slight total revenue growth for telecommunications services of 0.5 % for the countries of our Europe operating segment for 2023; for 2024 growth will also be rather modest. Customer demand for a fast and reliable broadband connection is expected to lead to growth in broadband revenues of around 2 % in the coming two years. The trend towards increased data usage will continue, especially in households that have not previously had sufficiently fast broadband lines. Demand has also grown as a result of the trend towards working from home induced by the coronavirus pandemic, which potentially will not noticeably decline in the future. On top of this, the fiber-optic build-out is being accelerated. In most Central and Eastern European countries, there is still the possibility of increasing broadband network coverage. Additional regulatory-induced measures will likely further boost investments in network infrastructure. This growth is being bolstered by the growing number of companies offering convergent products. According to Analysys Mason, TV revenues will increase in traditional pay TV business by around 1 % in both 2023 and 2024. Mobile revenues will increase by just under 1 % in 2023 and 2024 according to the Analysys Mason forecast.

We aspire to continue developing into Europe's Leading Digital Telco in the coming years. We stated this aim at the 2021 Capital Markets Day and we continue to confirm it. All national companies in the Europe operating segment except for Romania are integrated providers of telecommunications services, have high brand recognition levels, and are very significant players in their respective home markets. The national companies support each other by sharing training and knowledge, especially when it comes to the challenges arising from digitalization and cloudification. In order to further strengthen our competitiveness, we are working in partnership with other companies, in Austria and the Czech Republic for example, to drive forward the network build-out.

We firmly believe that we can only generate long-term and sustainable growth if we put our customers at the heart of everything we do. In the consumer segment, we want, for example, to create the best customer experience by offering our FMC product portfolio to customers across all national companies in a segment-specific way. With MagentaOne, we integrated fixed-network and mobile services with which we successfully shape developments on the European markets. Over the next few years, we will further develop these convergent product bundles to address specific target groups. Our TV business remains key to the success of FMC. That is why, going forward, we will continue negotiations, depending on local market conditions, to acquire (co-)exclusive rights to broadcast national and international sports events, such as soccer leagues, or the rights to TV movies/series. In addition, we will work with local and international OTT services, such as Netflix, Voyo, or RTL+, to enable our customers to enjoy entertainment across all devices, depending on the offers available in each market.

Digital interaction with our customers is a key factor in meeting customer needs in a more personalized and efficient way, and positioning products and innovative services on the market more quickly. Our service app – a digital interaction tool – is already used by more than two thirds of our customers. It helps us monetize our product portfolio through up- and cross-selling, and bring down costs by reducing service cases through self-service and preventive maintenance. We offer another possibility for interaction, for example, through our digital retail platform, OneShop, which is already in use in four countries. In customer interactions – whether digital or in person – we want to ensure that we can offer customers the best customer experience. Thus, we believe we can achieve first place in customer satisfaction rankings of telecommunications companies in the respective countries by 2024, as measured by the TRI*M index which is based on empirical research.

We are able to do all this because we use our network infrastructure intelligently based on different technologies. With our fast fiber-optic networks and the accelerated rollout of 5G, we are playing our part in the digital transformation and we want to serve private households, business customers, and municipalities with our fully integrated products. In all our footprint countries, we will gradually re-use the technology that is currently still used for 3G and reform the released spectrum to increase LTE and 5G capacity. The build-out of fiber-optic technology also progresses further. By 2024, we will add around 2 million more households, increasing fiber-optic coverage from the current level of 8.1 million households (32.0 % coverage) to a level of 40 % network coverage. We plan to increase the number of connected households to over 3 million and thus to achieve a utilization rate of 33 % by 2024.

In the B2B area, the ever more complex requirements of digitalization are putting pressure on companies and the public sector to act. Here we will combine digital offers, innovations beyond the core offering, the engagement platform, and other business models. These also include modern digital infrastructure, cloud and data storage solutions with automatic back-up functions, and software-defined network functions through partners such as Cisco, Viptela, Versa, or Fortinet. The issue of security is one of our focus areas. In a number of markets, we have already secured data traffic for business customers in our mobile and fixed networks, on a fully-automated basis, without any installations on the customers' side. We will continue to build out these functions, constantly expand our portfolio for all company sizes, and optimize our advisory approach with expert teams.

In our Europe operating segment, we expect a positive trend in both consumer and business customer numbers in the next two years, primarily thanks to the stronger focus on the convergence brand MagentaOne. We expect the number of mobile customers to grow in 2023 and to increase slightly in 2024. We expect the number of fixed-network lines to remain stable in both years. We expect the number of broadband customers to grow in both 2023 and 2024. For TV customers, we forecast an increase for 2023 and again for 2024.

We expect revenues for our Europe operating segment to increase in 2023 and to increase slightly in 2024 – measured on a comparable basis, i.e., at constant exchange rates and market conditions, and given an unchanged organizational structure – despite pressure resulting from decisions by regulatory authorities, such as the supplementary telecommunications tax imposed in Hungary, and the further reduction in mobile termination rates. Likewise we expect service revenues to increase in 2023 and to increase slightly in 2024.

We assume that prices on the energy market will remain at a high level for the time being. On top of this comes higher inflation in the countries of our segment, which could increase pressure in future collective bargaining rounds with employee representatives regarding the adjustment of salaries. In addition, highly intense competition in the markets of our operating segment could potentially put pressure on our margins. In order to be prepared for such a trend, we realize cost-cutting potential and intend to increase our productivity and exploit the benefits of digitalization, for instance by automating processes. Accordingly, we expect adjusted EBITDA AL to remain stable at EUR 4.0 billion in 2023 and to increase in 2024.

To maintain our technology leadership, we continue to invest in our integrated networks and plan to maintain the high overall level of investments over the next few years. We expect a stable trend for cash capex (before spectrum investment) in 2023 and 2024.

Systems Solutions

Overall, growth in the IT market is expected to remain stable over the coming years, while cost pressure and intense competition are likely to persist. Digitalization will accelerate further in many areas. For this reason, we expect demand for advisory services and solutions in the areas of cloud services and digitalization of business processes, as well as IT security (cyber security) and sustainability to increase further.

The market for IT services is expected to continue growing over the coming years. At the same time, this market is undergoing a radical transformation, e.g., due to ongoing standardization and automation, demand for smart services, and the changes being wrought by cloud services in outsourcing business. Further challenges have arisen in the shape of digitalization and the growing importance of cybersecurity. Traditional IT business will continue to decline, while advisory, cloud services, and cybersecurity may achieve double-digit growth rates. In view of all this, our plan is to continue investing increasingly in growth markets – especially in digitalization (e.g., EDGE, artificial intelligence (AI), and blockchain), multi- and hybrid cloud services, and cybersecurity.

Part of our Group strategy is the ambition to be a leading partner for business productivity. We give our customers help and guidance in implementing digital business models with our offerings for advisory, cloud services, and digitalization solutions, including data sovereignty and security, as well as through our strategic partnerships.

Under the program to transform our systems solutions business, we realigned our organization and workflows on a portfolio basis, thereby creating the basis for business transparency and dedicated portfolio management and strategy. We are continuing to drive forward expansion of the growth business (e.g., public cloud, sovereign cloud, cloud migration, big data, and data intelligence) while at the same time stabilizing and making further cost savings in established IT business (e.g., infrastructure solutions), with the aim of bringing about a significant shift in the revenue mix towards our growth areas.

In terms of revenue and market share, we are among the top providers in the European IT market and are market leader in Germany. Our very high levels of customer satisfaction – with a TRI*M score of 96 – are a core element in maintaining this position in the long term as well as in playing a leading role in digitalization.

Overall, for the Systems Solutions operating segment we are forecasting a stable year-on-year trend in order entry for 2023 and moderate year-on-year growth for 2024. Revenue is expected to trend stably in 2023 and to increase slightly in 2024. Revenue primarily comprises service revenue. The trend in service revenue thus essentially mirrors that of total revenue. Adjusted EBITDA AL is expected to increase in 2023, reaching around EUR 0.3 billion. We expect adjusted EBITDA AL to increase again in 2024. We expect cash capex (before spectrum investment) to remain stable in 2023 and 2024.

Group Headquarters & Group Services

At Group Headquarters & Group Services, we will stay focused over the next two years on our ongoing efficiency enhancement measures, with which we are further optimizing our structures, especially within Group Services. We will also continue to focus on implementing our cost-cutting measures. This will primarily involve reallocating human resources, bundling standardized processes for the Group, and enhancing the value of our real estate portfolio by means of innovative space and workplace concepts. In the course of further optimizing office space and capacities in the Group, we use existing technical solutions that make it easier for our employees to organize their own place of work flexibly between home or the office. As these cost cutting measures will put us in a position to offer our services more cost-effectively, the operating segments stand to benefit from them as well. Our focus on a sustainable future is reflected in our decision to extend the useful life of our vehicle fleet and to convert the procurement of all new company vehicles to e-mobility.

In the coming years, too, our Board of Management department Technology and Innovation will drive not only the development of innovative technologies, products, and services, but also IT standardization and the ongoing establishment of centralized production platforms. Major areas of capital expenditure in the years 2023 and 2024 will include technology development, the implementation of our IT strategy, and security. We expect this to reduce overheads, mainly driven by IT operating costs, the ongoing standardization of IT infrastructure and platforms – mainly through cloudification, automation, and retiring – and by standardizing IT interfaces.

In the long term, these savings will help the Group finance its innovation endeavors. We are focusing on innovation topics such as network slicing, Open Radio Access Network (O-RAN), applications based on the 5G mobile communications standard, vertical cloud production for the Group's own network, evolution of a proprietary smart system for the voice control of Deutsche Telekom products and services, and introduction of a uniform operating system for routers marketed by the Group. Technological innovations will serve to safeguard the network and technology leadership of our Germany and Europe operating segments in the long term and to evolve the campus networks, which are designed to improve the integrated automation of our international industrial customers' production processes. Ultimately, every one of our investment projects revolves around enhancing the customer experience.

Risk and opportunity management

Board of Management's assessment of the aggregate risk and opportunity position

The assessment of the aggregate risk position is the outcome of the consolidated analysis of all material risk categories or individual risks. The aggregate risk position has deteriorated compared with the prior year due to the war in Ukraine and the resulting consequences for the global economy. Our major challenges particularly include the regulatory factors, economic uncertainties, and intense competition and the associated pressure on profitability in the telecommunications business, as well as the pressure to change arising from new technologies and strategic transformation. At the time of preparing this report, neither our risk management system nor our management could identify any material risks or developments that threaten the continued existence of Deutsche Telekom AG or a significant Group company as a going concern.

We are convinced that we will also be able to master challenges and exploit opportunities in the future without having to take on any unacceptably high risks for our business or for society and the environment. We strive to achieve a good overall balance between opportunities and risks, with the aim of increasing added value for our stakeholders by analyzing and seizing new market opportunities.

For further information on sustainability, please refer to the section [“Combined non-financial statement.”](#)

Risk and opportunity management system

As one of the world’s leading providers in the telecommunications and information technology industry, we are subject to all kinds of uncertainties and change. In order to operate successfully in this ongoing volatile environment, we anticipate potential developments at an early stage and systematically identify, assess, and manage the resulting risks and opportunities. We therefore consider a functioning risk and opportunity management system to be a central element of value-oriented corporate governance.

A risk and opportunity management system of this kind is not only necessary from a business point of view; it is also required by laws and regulations, in particular § 91 (2) and (3) of the German Stock Corporation Act (Aktiengesetz – AktG). Deutsche Telekom AG’s Audit Committee monitors the effectiveness of the internal control system and the risk management system as required by § 107 (3) sentence 2 AktG.

Our risk and opportunity management system is based on the globally applicable risk management standard of the International Standards Organization (ISO). ISO standard 31000 “Risk management – Principles and guidelines” is regarded as a guideline for internationally recognized risk management systems.

Our Internal Audit unit reviews the functionality and effectiveness of elements of our risk management system at regular intervals. Under § 317 (4) of the German Commercial Code (Handelsgesetzbuch – HGB), the auditor of listed companies should assess whether the board of management has taken the measures incumbent upon it under § 91 (2) AktG in a suitable form, and whether the monitoring system stipulated by this paragraph is calculated to meet its objectives, including the early detection of developments that could put the continued existence of the company at risk. Our system complies with the statutory requirements for a risk early detection system.

In addition, our Group Controlling unit specifies a series of Group guidelines and processes for the planning, budgeting, financial management, and reporting of investments and projects. These guidelines and processes are intended to guarantee both the necessary transparency during the investment process and the consistency of investment planning and decisions in our Group and operating segments. They also provide the Board of Management with support in reaching its decisions. This process also includes the systematic identification of strategic risks and opportunities. The Group Policy on Risk Management was further refined in 2022 and adapted to the current circumstances.

Organization of the risk and opportunity management system

The Group Risk Governance unit defines the methods for the risk and opportunity management system that is applied Group-wide and for the associated reporting system, in particular the Group risk report. All operating segments as well as the Group Headquarters & Group Services segment are connected to the central risk and opportunity management system of the Group via their own risk and opportunity management. The relevant owners in each of the segments are responsible for identifying, assessing, and continuously monitoring risks. Management takes potential opportunities into account in the annual planning process and continuously develops them further during business operations.

Our Group-wide risk and opportunity management system covers strategic, operational, regulatory, legal, compliance, and financial risks and opportunities for our consolidated and major non-consolidated entities. The standard process described below provides a framework. The starting point for the identification of risks and opportunities is the deviation from a planned value or company target. Once risks and opportunities have been identified, we move on to analyze and assess them in more detail. We then decide on the specific course of action to be taken, for example, in order to reduce risks or seize opportunities. The respective risk owner evaluates, implements, and monitors the associated measures. After taking mitigating measures into account, these risks are summarized in the risk reporting, which is submitted to the decision-makers in the company and/or the relevant supervisory body. This also enables transparent monitoring of the development of individual risks, as well as of the overall risk situation, including the mitigation measures taken. Our risk culture, the manner in which we deal with risks, is a key component and embedded in all parts of the Company.

The risks and opportunity management process is described below using five elements. For purposes of simplification, “risks” is used in the following, instead of referring to “opportunities and risks” in each case. The document nonetheless focuses on both positive and negative deviations from the planned value. Risk management is therefore always a matter of opportunity and risk management.

The risk and opportunity management system



Risk culture

Our risk culture includes the basic attitudes in relation to risks and forms the basis and the framework for everyday business, for being able to make risk-oriented decisions. The risk culture is closely interlinked with Deutsche Telekom’s corporate culture, which requires risks and opportunities to be dealt with in a positive and transparent way. At the core of our risk culture is the motto “Everyone is a risk manager,” which means that, in principle, every employee takes responsibility for their risks, and handles them in accordance with the defined process.

Corporate targets

The corporate targets (or targets for the relevant individual unit derived from these) serve as the starting point for the identification of risks as deviations from planned values. These include both quantitative and qualitative targets. In order to assess the threat to the continued existence of the Company, we implemented the concept of risk-bearing capacity. Risk-bearing capacity encompasses the assets for covering possible losses. These assets are defined through equity and liquidity.

Risk analysis

Risk identification. Each segment produces a quarterly risk report or risk notification in accordance with the standards laid down by the central risk management and based on specific materiality thresholds. These reports or notifications assess risks, taking into account their extent in terms of impact on results of operations or financial position, as well as their probability of occurrence, and they identify action to be taken and suggest or initiate measures. Qualitative factors affecting our strategic positioning and reputation are taken into account. We base our assessment of risks on a period of two years. This is also the length of our forecast period. If significant risks exist beyond the forecast period, these are monitored and documented on an ongoing basis. In addition, on an annual basis, we consider “emerging risks,” which are primarily derived from external studies. These are risks and opportunities that are developing at considerable pace, and in some cases are difficult to assess. Risks and opportunities like these are triggered primarily by technological developments (e.g., digitalization), environment (e.g., climate change), or threats (e.g., cyberattacks).

Risk assessment. Individual risks are assessed on the basis of “probability of occurrence” and “risk extent.” The following assessment yardsticks apply:

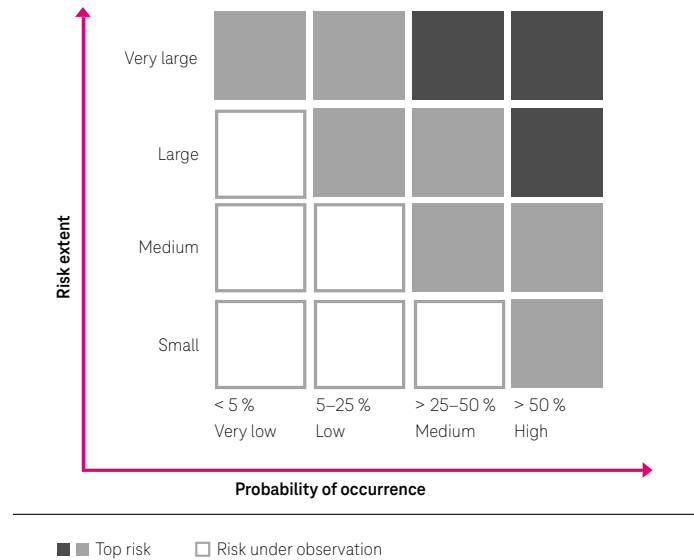
Probability of occurrence	Description
< 5 %	Very low
5 to 25 %	Low
> 25 to 50 %	Medium
> 50 %	High

Risk extent	Description
Small	Limited negative effects on business activities, results of operations, financial position, and reputation; individual EBITDA AL risk < € 200 million
Medium	Negative effects on business activities, results of operations, financial position, and reputation; individual EBITDA AL risk ≥ € 200 million
Large	Significant effects on business activities, results of operations, financial position, and reputation; individual EBITDA AL risk ≥ € 500 million, and/or affects more than one Group entity
Very large	Damaging negative effects on business activities, results of operations, financial position, and reputation; individual EBITDA AL risk ≥ € 1.0 billion, and/or affects more than one Group entity

Risk extent is primarily assessed based on EBITDA AL. If relevant, other indicators are to be used for the assessment, e.g., financial risks based on cash flow, which can also be used to assess the categories of risk.

On the basis of our assessment using the criteria described above, we categorize the individual risks in our risk and opportunity management process as top risks or risks under observation, as shown in the graphic below.

Risk portfolio



We generally report the top risks (gray and dark ray shading). Exceptions are possible, for example, risks from prior years that we continue to list for the sake of reporting continuity although they are classified as “risk under observation” (white shading) in the current reporting period.

It should be noted that risks with an extent currently assessed as being small may in the future have a stronger impact than risks currently assessed as having a larger extent. This may be due to uncertainties that cannot be assessed at present and over which we have no influence.

For the aggregate disclosure of an overall risk position, Group Risk Governance performs an “EBITDA AL at risk” calculation for Deutsche Telekom. This states that, with a particular probability of occurrence, the risk extent ascertained using the simulation will not be exceeded. In a change to the 2021 combined management report, the methodology has been extended to add “Cash flow at risk,” a new calculation that aggregates the risks affecting cash flow. The risk aggregations are carried out using a technique that has become known as Monte Carlo simulation, in which a large number of risk-related potential future scenarios is considered. The overall risk positions are set in relation to the assets for covering possible losses. The risk-bearing capacity analysis is carried out once a quarter as part of risk reporting.

Identification and assessment of opportunities in the annual planning process. The systematic management of risks is one side of the coin; securing the Company’s long-term success by means of integrated opportunities management is the other. That is why identifying opportunities and subjecting them to a strategic and financial assessment is an essential part of our annual planning process. It allows us to factor those opportunities into our forecasts for financial and non-financial performance indicators.

The short-term monitoring of results and the medium-term planning process help our operating segments and Group Headquarters identify and seize the opportunities in our business throughout the year. While short-term monitoring of results mainly targets opportunities for the current financial year, the medium-term planning process focuses on opportunities that are strategically important for our Group. In this context we distinguish between two types of opportunity:



- External opportunities, i.e., those with causes over which we have no influence, for example, the revocation of additional taxes in Europe.
- Internal opportunities, i.e., those that arise within the Company, for example by focusing our organizational structure on innovation and growth areas and products, or through business partnerships and collaborations from which we expect to reap synergies.

We are constantly enhancing the efficiency of our planning process so as to gain greater scope for action. The preliminary plans of our operating segments form the basis for a concentrated planning phase during which members of the Board of Management, business leaders, senior executives, and experts from all business areas intensively discuss the strategic and financial focus of the Group and its operating segments, and from all of which they ultimately produce an overall picture. The identification of opportunities from innovation and their strategic and financial assessment play a major role throughout this process. This “brainstorming” may result in opportunities being taken and transferred to the organization, or rejected and passed back to the respective working groups for revision.


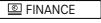
Risk handling

Group insurance management. To the extent possible and economically viable, we take out adequate Group-wide insurance cover for insurable risks. DeTeAssekuranz – a subsidiary of Deutsche Telekom AG – acts as an insurance broker for group insurance management. It develops and implements solutions for the Group’s operational risks using insurance and insurance-related tools and places them on the national and international insurance markets.

Taking out insurance cover is an essential option for our external risk transfer. The coverage of risks in our Group insurance programs requires the transfer of risk for the purpose of protecting the Group’s financial position. That means that the possible extent of the risk must have reached a volume “relevant for the Group” or the risks have to be bundled and managed at Group level to protect the Group’s interests (opportune reasons/cost optimization/risk reduction).

Business continuity management (BCM).   BCM is a process within operational security and risk management that helps protect business processes from the consequences of damaging incidents and disruptions. It ensures the continuation of business processes through ongoing analysis, assessment, and management of relevant risks for people, technology, infrastructure, supply and service relationships, and information. The aim is to identify potential threats at an early stage and to keep the impact and duration of a disruption of critical business processes to an acceptable minimum by ensuring appropriate resilience in the organization plus the ability to effectively cope with threats.

To this end, BCM identifies critical business processes and business processes requiring protection, including any supporting processes, process steps, and assets (people, technology, infrastructure, information, and supply and service relationships). Appropriate precautionary measures are also defined. In particular, security management works in coordination with the relevant units and process owners to analyze the possible consequences of external and internal threats with relevance for security, such as natural disasters, vandalism, or sabotage. Once the extent of potential losses and probability of occurrence have been assessed, preventive measures can be put in place and contingency plans developed.

Risk containment measures.   The risk owners initiate and execute further measures to mitigate the risks. A wide range of measures are available, depending on the risk type. A few examples of these measures are:

- We tackle risks from the market environment with comprehensive sales controlling and intensive customer management.
- We deal with risks arising from brand and reputation by continuously analyzing the market and communications.
- We also take a whole array of measures to deal with operational risks: for example, we constantly implement operational and infrastructural measures in order to improve our networks, and offer our employees systematic training and development programs.
- We deal with risks from the political and regulatory environment through an intensive, constructive dialog with policymakers and the authorities.
- We minimize legal risks by ensuring suitable support for proceedings and by designing contracts appropriately in the first place.
- We manage interest and currency risks by means of systematic risk management and hedge them using derivative and non-derivative financial instruments.
- The Group Tax unit identifies potential tax-related risks at an early stage and systematically records, assesses, and monitors them. It takes any measures necessary to minimize tax-related risks and coordinates them with the Group companies affected. The unit also draws up and communicates policies for avoiding tax risks.

Risk monitoring

The Group risk report, which presents the main risks, is prepared for the Board of Management on a quarterly basis. The Audit Committee of the Supervisory Board of Deutsche Telekom AG also examines this report at its meetings. Furthermore, the Board of Management informs the Supervisory Board. In addition, the emerging risks are presented once a year as part of the risk report. Among other benefits, the Group risk report ensures transparent monitoring of the development of individual risks, as well as of the overall risk situation. This is supported by the Group-wide risk management tool. If any unforeseen risks arise, they are reported ad hoc (even outside of regular reporting). We inform the Audit Committee about all of the latest developments and/or changes in the risk management system at a special meeting held annually.

Risks and opportunities

In the following section, we present all risks and opportunities of significance to the Group – including emerging risks – that, as things currently stand, could affect the results of operations, financial position, and/or reputation of Deutsche Telekom and, via the subsidiaries' results, the results of operations, financial position, and/or reputation of Deutsche Telekom AG. We only consider risks and opportunities after the mitigation measures taken (net assessment). If risks and opportunities can be clearly allocated to an operating segment, this is presented accordingly in the following.

In order to make it easier to understand and see their effects, we have assigned the individually assessed risks to the following categories. Where multiple individual risks are assigned to one risk category, we calculate the risk significance on the basis of risk aggregation carried out using a Monte Carlo simulation, in which we consider the individual risks along with their individual extent and probability of occurrence. The outcome, or risk significance, is the "value at risk." This states that, with a particular probability of occurrence, the risk extent ascertained using the simulation will not be exceeded. An expert assessment is used for risk categories that have not been quantified.

The resulting risk significance for the risk categories is broken down into four levels:

Risk significance	Description
Low	< € 200 million value at risk
Medium	≥ € 200 million value at risk
High	≥ € 500 million value at risk
Very high	≥ € 1.0 billion value at risk

Corporate risks

	Risk significance	Change against prior year
Strategic risks		
Macroeconomic environment, Germany	Medium	Deteriorated
Macroeconomic environment, United States	Medium	Deteriorated
Macroeconomic environment, Europe	Medium	Deteriorated
Market environment, Germany	Low	Unchanged
Market environment, United States	Very high	Unchanged
Market environment, Europe	Low	Unchanged
Strategic implementation and integration	High	Unchanged
Brand and reputation	Low	Unchanged
Sustainability and social responsibility	Medium	Unchanged
Health	Low	Unchanged
Operational risks		
Technology, Germany	Low	Unchanged
Technology, United States	Medium	Improved
Technology, Europe	Low	Unchanged
Procurement and suppliers	Low	Unchanged
Data privacy and data security	High	Deteriorated
Other operational risks	Medium	Deteriorated
Regulatory risks	Medium	Unchanged
Litigation and anti-trust proceedings	See Litigation	
Compliance risks	See Compliance risks	
Financial risks	High	Unchanged

Strategic risks and opportunities

Risks and opportunities relating to the macroeconomic environment. As an international corporation, we operate in a large number of countries, using a range of currencies. A substantial economic downturn could generally reduce the purchasing power of our customers and adversely affect our access to the capital markets. Exchange rate fluctuations could impact on our earnings.

Uncertainty over the global economic outlook remains high. The war in Ukraine has had a significant negative impact on the economic outlook. One repercussion is the sharp rise in energy prices, which in turn are driving up energy, transportation, and manufacturing costs. The general scarcity of energy sources could push up global energy prices further and lead to supply shortages, especially for our Germany and Europe operating segments. The coronavirus pandemic also continues to have implications for the global economy. Although the pandemic has only had a limited negative impact on the telecommunications sector so far, if it were to re-escalate, it could lead to further supply-side shortages. In this context, China's central role for global supply and value chains poses a particular risk. As a result of the combination of rising prices and prolonged supply bottlenecks, a decline in economic output is expected in the latter part of 2022/early part of 2023 while inflation remains high. A migration to lower-cost rate plans among customers, as well as larger numbers of customers defaulting on payments, could ensue. Similar developments could also arise in the United States, where pandemic-related government aid programs have come to an end. Interest rate hikes in the United States and Europe and the likelihood of yet further increases could drive down overall investment activity and consumption. Additional risks could result from other geopolitical conflicts, for instance between China and Taiwan, and the uncertainty from international trade conflicts. In principle, extreme risks with a high impact of loss and a very low probability of occurrence could also have a substantial impact on the global economy and our business. Examples of these are extensive extreme weather events (e.g., tsunamis, solar storms), a new disruptive technology, further armed conflicts, or new pandemics. We therefore expect the macroeconomic situation in Germany, the United States, and Europe to deteriorate and are raising the risk significance from low to medium.

These risks are counterbalanced by opportunities. Many governments (including in Germany, in particular) have decided to provide extensive support to their citizens and companies – this helps to absorb at least part of the increase in energy prices and could mitigate falling consumption to some extent and reduce insolvency.

Risks from the market environment. The main market risks we face include the steadily falling profitability of voice and data services in the fixed network and in mobile communications. In addition to price reductions imposed by regulatory authorities, this is primarily attributable to ongoing intense competition in the telecommunications industry.

Competitive pressure is expected to continue, especially in the fixed network in Germany and the countries of our Europe operating segment. In the broadband market, the trend of disproportionate growth in the market shares of regional network operators and supra-regional specialist FTTH providers, particularly in Germany, continues to establish itself. They build out their own infrastructure and thus increase their market coverage. Increasingly this is done with fiber-optic infrastructure, thereby increasing their customer numbers and expanding their own value added. There is still strong competition to gain new customers by cutting prices and offering introductory discounts.

We expect ongoing price pressure for mobile voice telephony and mobile data services, which could adversely affect our mobile service revenues. Among the main reasons for this price pressure are data-centric, aggressively priced offers. Providers that do not have their own infrastructure (MVNOs) market such offers over the internet, for instance, while there is also the risk that smaller competitors will take unforeseen, aggressive pricing measures. Technological innovations such as the use of pure eSIMs in smartphones could put further pressure on prices by increasing the willingness of customers to switch providers.



Another competitive risk lies in the fact that, both in the fixed network and in mobile communications, we are increasingly faced with competitors who are not part of the telecommunications sector as such, but are increasingly moving into the traditional telecommunications markets. This mainly relates to major players in the internet and consumer electronics industries. As a result, we are exposed to the risk of a further loss of share of value added and falling margins due to increasingly losing direct customer contact to competitors.

T-Mobile US is active in a market environment that is characterized by intensive, increasing competition. Alongside traditional telecommunications providers that deliver bundled offerings including content and mobile video services, there is additional competition, as mobile, fixed-networks, and satellite industries increasingly converge. Additionally, potential market saturation in the United States may cause the wireless industry's customer growth rate to decline in comparison with previous years. There were changes in the market environment of T-Mobile US among others due to the successful acquisition of spectrum. High-speed internet allows our U.S. subsidiary to offer its own access product and provide a basis on which to continue the business with bundled offerings. Furthermore, in the market environment of T-Mobile US strategic partnerships and MVNO relationships are being built. T-Mobile US must continue to successfully refine and implement its market strategy as Value Leader, Customer Service Leader and 5G Network Leader to attract and maintain customers. Increasing competitive pressure due to attractive bundle offers and device promotions could lead to difficulty in achieving targets in terms of business, financial and operating results in the future. Furthermore, social instability may cause protests or demonstrations that could escalate and lead to business disruptions such as store closures or inventory theft.



Innovation cycles are getting shorter and shorter. This confronts the telecommunications sector with the challenge of bringing out new products and services at shorter and shorter intervals. New technologies are superseding existing technologies, products, or services in part, in some cases even completely. This can lead to lower prices and revenues in relation to the services offered, such as telephony, news, internet access, smart home, or television – right through to full substitution by new, global providers. These substitution risks could impact our revenue and earnings. We deal with the impact of substitution risks by, for example, offering integrated solutions with hyper-personalization and contextualization (e.g., HomeOS) in order to “turn customers into fans” and thereby secure their loyalty. In terms of building out fiber-optic networks, more and more new competitors are entering into the markets, which can lead to longer payback periods for all market players. A strategic rivalry is growing between the “West” (United States and Europe) and the “East” (China), which could accelerate various technological areas (e.g., in 6G).

Our Systems Solutions operating segment also faces challenges. Continued strong competition and persistent cost pressure are adversely affecting traditional IT business. In addition, the technological shift toward cloud solutions and digitalization in the IT sector is prompting new, strongly capitalized, competitors to enter the market. This might lead to revenue losses and declining margins at T-Systems.

Opportunities from the market environment. The telecommunications and IT market is extremely dynamic and highly competitive. The economic and competition conditions as well as customers’ changing wants and needs affect our actions and impact on our Company indicators. We generally expect the situation to develop as described in the section “[Forecast.](#)”

Apart from the risks described, there is the possibility that our customers could move to higher-value rate plans since the data volume of the applications used is rising steadily. Likewise, further growth could be generated by tapping into new customer segments, especially in the United States (e.g., for business customers and small and medium-sized enterprises). In addition, ever-shorter innovation cycles could enable us to drive the digital transformation of our society and to provide our consumers and business customers with innovative products and solutions. That is why, with growing convergence of networks, IT, and products, our innovation and technology activities are decisive when it comes to identifying opportunities and making the most of them in an increasingly competitive environment. Hence, our Technology and Innovation Board of Management department has joined all relevant functions under a common leadership to ensure a close integration of technology, innovation, IT, and security.   By doing so, we are putting the development of human-centered solutions and outstanding, seamless customer experiences front and center, and in the reporting year we won multiple awards, for example, for our digital assistant Frag Magenta and the product MagentaZuhause (SmartHome).

| For further information on our innovation activities, please refer to the section “[Technology and innovation.](#)”

The substantial increase in capacity, bandwidth, and availability, and the lower latencies provided by the 5G mobile standard we have rolled out offer greater reliability, security, and guaranteed service quality, for example, for industrial use cases. 5G enables increased requirements for existing business models to be managed more cost-efficiently going forward. In addition, it offers opportunities for further business models, by marketing improved network capabilities (e.g., network access, localization, security, identity, storage location, temporary storage) to relevant partners. We have already implemented many use cases with 5G, such as 5G campus networks, applications for extended reality (XR), support for autonomous driving and mobile edge computing, in which data is processed in a decentralized manner (at the edges of the network). Together with other technologies like the NarrowBand Internet of Things (NB-IoT) and artificial intelligence (AI), 5G and edge computing provide the underpinnings for the further digital transformation of society. To develop the next, sixth mobile generation, we are working with industry and researchers on a standard that aims to address a number of current challenges facing telecommunications networks: the connection between all people, the orchestration of various access networks, sustainability, and carbon neutrality, and the further underpinning of data privacy, trust, and security.  

Furthermore, opportunities for new project business are arising in our systems solutions business from data sovereignty, innovation areas such as AI, and industrial IoT initiatives.

Risks relating to strategic implementation and integration. We are in a continuous process of strategic adjustments and cost-cutting initiatives. If we are unable to implement these projects as planned, we will be exposed to certain risks. In other words, the benefit of the measures could be less than originally estimated, take effect later than expected, or not at all. Each of these factors, individually or in combination, could have a negative impact on our business situation, financial position, and results of operations.

The business combination of T-Mobile US and Sprint was consummated on April 1, 2020. The combination of the two companies to form the new T-Mobile US affects all operational areas; for instance, the integration of the mobile networks and the IT and technology environments, customer management, sales, HR management, logistics, and the control environment. T-Mobile US is making progress with leveraging synergies from the business combination with Sprint. By combining and optimizing the mobile networks, T-Mobile US has already been able to migrate the vast majority of customers to its own network. T-Mobile US is ahead of plan with the network decommissioning. The legacy Sprint CDMA retirement was substantially completed in the second quarter of 2022 and the orderly shut-down of the LTE network was completed in the third quarter of 2022. The last major part of the integration is the billing conversion, which is expected to be largely complete by the end of 2023. It remains necessary to fulfill multiple conditions, including those agreed with the antitrust and regulatory authorities. Numerous commitments exist, particularly with respect to the network build and to support DISH as they build a stand-alone network.

Collaboration with Chinese suppliers is being impeded by the enduring trade conflict between the United States and China. Since 2020, the United States has restricted the use of U.S. technology for and by Chinese suppliers on account of security concerns. They also put pressure on other countries to do the same. In Germany, the legislator has put an end to many years of intensive discussion concerning the security of critical infrastructure with the Second Act to Increase the Security of Information Technology Systems, or the IT Security Act 2.0 (IT-Sicherheitsgesetz 2.0). A positive outcome is that a number of long-disputed requirements for critical infrastructure (KRITIS) have now been laid down. Deutsche Telekom itself has long been scrutinizing security-critical components prior to installation and on an ongoing basis once in operation. We therefore assume that the assessment by the authorities will also be compatible with rapid network build-out and will not lead to any long-term delays. The IT Security Act 2.0 does not include any ban on individual manufacturers. The German Federal Ministry of the Interior and Community is currently drafting the necessary rules (on the certification of critical components, manufacturer declarations of trustworthiness, among others) for the practical application of the IT Security Act 2.0. The requirements laid down in the security catalog, drawn up by the Bundesnetzagentur and the Federal Office for Information Security in accordance with the Telecommunications Act and published in early August 2021, will be relevant to any critical components that could potentially be affected. In respect of the certification obligation for components that have already been installed, the catalog stipulates a transition period expiring on December 31, 2025. This is why the affected components can largely be considered to be grandfathered until that point in time. The risk of a retrospective order to remove components already installed in the network is low under current legislation. However, we cannot rule out the possibility that critical components from certain manufacturers currently in use may not be deployed from January 1, 2026 onwards. Several network operators have taken steps to file official objection proceedings to clarify the ambiguous legal terminology and scope of application of the security catalog. Irrespective of this, the hurdles for retrospective orders to remove components already approved will be high. In other countries, such as Austria and Poland, it is still possible that suppliers in critical infrastructure will have to be replaced within specific deadlines.

Opportunities relating to strategic implementation and integration.   In our Magenta Advantage strategic area of operation, we work with partners to develop new digital business models based on our assets or capabilities. These partnerships provide opportunities for us to increase revenue and strengthen customer loyalty. Since the start of 2022, we have made exclusive offers from partner firms available to customers on our OneApp, for example TIER Mobility, GetYourGuide, and Disney+. We will continue to expand this pan-European loyalty program in our European markets going forward.

The logical network that has resulted from the completed IP transformation (all IP) speaks one language and, in technical terms, functions largely independently of the services transmitted. This will enable efficiency gains, e.g., by reducing the complexity of maintenance and operation, switching off service-specific legacy platforms, and saving energy. In addition, all IP will generate growth potential both by improving the customer experience of existing services (e.g., better voice quality, more customer self-service, greater configuration flexibility) and by providing an indispensable basis for convergence products and the Internet of Things, and by shortening the time to market for new products.

One of the key benefits of the all-IP network is that it also acts as a foundation for the future cloud- and software-based production of networks and services. It creates opportunities to increase efficiency, accelerate the provision of new services and features, improve quality, and tap into new revenue potential, while at the same time increasing automation.

The disaggregation of the access networks (in mobile communications: Open Radio Access Network, O-RAN; in the fixed-network: Access 4.0) and core networks (e.g., the 5G core network) as part of our network differentiation strategy offers the opportunities of expanding the supplier ecosystem and, as a result, increasing competition, flexibility, and innovation. As we simultaneously drive forward automation and cloudification, we also expect a reduction in total costs and an increase in agility and speed in the provision of new services and features.

We are driving forward the transformation of our IT using agile development, decoupling, and cloudification. These approaches enable us to tap into new possibilities for accelerating developments and increasing the efficiency of IT production, by providing modular components, known as microservices, and APIs and producing them in a scalable cloud with state-of-the-art technology. Furthermore, agile and decoupled development makes it possible to reduce big bang risks in the delivery of major software releases by means of smaller, flexible software releases.

Risks and opportunities arising from brand and reputation. An unforeseeable negative media report on our products and services or our corporate activities and responsibilities may have a huge impact on the reputation of our Company and our brand image. Social networks may make it possible that such information and opinions can spread much faster and more widely. Ultimately, negative reports may impact on our revenue and our brand value. In order to avoid this, we engage in a constant, intensive, and constructive dialog, in particular with our customers, the media, and the financial world. For us, the top priority is to take as balanced a view as possible of the interests of all stakeholders and thereby uphold our reputation as a reliable partner.

Risks and opportunities relating to sustainability and social responsibility. For us, comprehensive risk and opportunity management also means considering the opportunities and risks arising from ecological or social aspects or from the management of our Company. To this end, we actively and systematically involve all relevant stakeholders in the process so as to identify current and potential risks and opportunities along our entire value chain. In parallel with our ongoing monitoring of ecological, social, and governance issues, we systematically determine our stakeholders' positions on these issues. The key tools we use here are: a document analysis, covering legal texts, studies, and media publications, amongst other things; our involvement in working groups and committees of national and international business associations and social organizations, e.g., GeSI, ETNO, BDI, Bitkom, Econsense, and BAGSO; stakeholder dialog formats organized by us; our various publications, such as the press review and newsletters; and workshops with experts from our Company. We also integrate the biggest sustainability risks in our internal compliance assessment, thereby recording the associated positioning and development of measures in the various business areas.

For further information on sustainability, please refer to the section "[Combined non-financial statement](#)."

We have identified the following as our main sustainability management issues:

- **Reputation.** How we deal with sustainability issues also entails both opportunities and risks for our reputation. A high level of service quality is one of the most important factors for improving customer perception. Customer satisfaction has been embedded in our Group management as a non-financial performance indicator to underline the importance of this issue. Transparency and reporting help to promote the trust of other external stakeholders in our Group. Our annual and CR reports also serve this purpose. However, issues such as business practices, data privacy, and work standards in the supply chain, conduct in relation to human rights, and ethical conduct in relation to and use of AI also entail reputational risks: if our brands, products, or services are connected with such issues in negative media reports, this may cause substantial damage to our reputation. As part of our sustainability management activities, we continuously review such potential risks and take measures to minimize them. This includes systematically incorporating them in the Group's internal compliance management system, so as to determine the relevance of the risks in relation to sustainability issues and their effect on reputation across units. We also ascertain how our products and services make a positive contribution to sustainability in order to enhance our reputation.
- **Climate protection.** We pursue an integrated climate strategy, which means focusing not only on the risks that climate change poses for us and our stakeholders, but also on the opportunities it presents. By 2030, ICT products and services will have the potential to save up to seven times as much in CO₂ emissions in other industries as the growth in the ICT sector itself will generate, even taking into account the expected rebound effects (according to the GeSI Digital for Purpose study). Taking an optimistic view, this could mean a 9 % reduction in global CO₂ emissions by 2030. In addition, investments of around USD 3 trillion in innovative solutions are expected by 2030, which will not only expand the business, but will also support the SDGs. We are supporting this trend by evaluating our product portfolio to identify sustainability benefits. In addition, we want to continuously improve the ratio of the emissions that our products and services save to those generated by our own value chain and report on our corresponding successes using an enablement factor.

Climate change risks are already visible in the form of increasingly extreme weather conditions. Such storm events can damage our infrastructure and disrupt network operation. This would have a direct effect on our stakeholders, e.g., our customers, suppliers, and employees and can result in revenue losses or lower customer satisfaction. The risk is assessed in relation to the continuation of operations as part of risk management and is managed at an operational level in the business units. Deutsche Telekom welcomes the targets behind the Task Force on Climate-related Financial Disclosures (TCFD) and is actively working to implement them. In a first step, we conducted a gap analysis on the coverage of TCFD recommendations. In a number of workshops with relevant players from technology, procurement, strategy, and risk management, we defined Deutsche Telekom AG's key climate-related opportunities and risks and gave them an initial weighting. As a next step, we conducted a location analysis, with the example of Germany, of the physical climate risks in various scenarios (business as usual/4-degree scenario), which is now being internationalized as part of a transnational project. In addition to the physical risks, transitory risks (threats arising from sudden adaptations to climate change made by economic sectors) were also being analyzed in detail.

| We will publish detailed information on this in the 2022 CR Report.

We can take further preventive action in this area by also reducing our own CO₂ emissions. For this reason, in 2021 we set ourselves the ambitious target of cutting our CO₂ emissions across the Group (Scope 1 and 2) to net zero by 2025. Up to 95 % of these emissions will be actually cut. Any remaining emissions will be offset through compensatory measures. Climate protection also carries financial risks, whether from the introduction of levies on CO₂ emissions or increased energy costs, as well as stricter requirements for products, for example in relation to energy efficiency. The measures we are taking to counter these risks include measuring our own energy efficiency and finding ways to improve it. Our new ESG targets agreed from 2021 for Board of Management remuneration in relation to the respective annual energy consumption as well as the planned annual CO₂ emissions for Scope 1 and 2 also contribute to achieving the climate targets and energy efficiency measures. We have a Group-wide program to specifically address our supply chain and we are working to optimize our products and their packaging. Since 2021, the Group has covered 100 % of its electricity requirement with renewable energy. This is achieved through power purchase agreements (PPAs) and other forms of direct purchase, also by other means, such as through guarantees of origin.

| For further information on this, please refer to the section "[Combined non-financial statement](#)."

- **Suppliers.** SDG 8 RELATIONSHIPS We see more sustainability in our supply chain as an opportunity – for our reputation and our business success. Apart from the general risks associated with our global procurement activities, we could be exposed to country- and supplier-specific risks. These include, for example, the use of child labor, the conscious acceptance of environmental damage, or inadequate local working and safety conditions. We systematically review our processes, including in terms of upcoming requirements (e.g., the German Supply Chain Due Diligence Act (Lieferkettensorgfaltspflichtengesetz)). Our due diligence obligations relate both to our own operating activities and to our supply chain. We regularly analyze and assess potential risks and introduce preventive and corrective measures as required. We conduct audits mainly within the scope of the Joint Audit Corporation (JAC). The aim of the JAC is to reduce sustainability risks in our supply chain and to improve ecological and social aspects, including the issue of human rights. As such, the audit is compliant with internationally recognized guidelines and standards, such as the ILO Core Labor Standards, the UN Guiding Principles on Business and Human Rights, and the OECD Guidelines for Multinational Enterprises. Our partnerships with suppliers that comply with international sustainability standards ensure a high level of product quality and reliable procurement. We have a special development program in place to help strategic suppliers introduce business practices that are both socially and ecologically acceptable while remaining economically efficient. This program showed measurable successes again in the reporting period and has three major advantages: It has a positive impact on our suppliers' working conditions, enhances their profitability, and makes the economic relevance of sustainability clear for both sides, i.e., for our suppliers and for the Group alike. For instance, better working conditions at our suppliers reduces the number of work-related accidents as well as the attrition rate. That, in turn, ensures high product quality and increases productivity, while at the same time lowering costs for recruitment and training. Thus, not only are we strengthening our suppliers' profitability and CR performance, we are also significantly reducing identified risks.


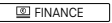
Health. SDG 3 RELATIONSHIPS Mobile communications, or the electromagnetic fields used in mobile communications, regularly give rise to concerns among the general population about potential health risks. This issue continues to be the subject of public, political, and scientific debate. Acceptance problems among the general public mostly concern mobile communications networks and occasionally the use of mobile terminals such as smartphones, tablets, and laptops. The discussion has intensified repercussions for the build-out of the mobile infrastructure. In the fixed network, this could affect the use of traditional IP and DECT (digital cordless) phones, and devices that use Wi-Fi technology. There is a risk of regulatory interventions, such as tightened thresholds for electromagnetic fields or the implementation of precautionary measures in mobile communications, e.g., amendments to building law, or also the risk of a labeling requirement for handsets.

Over the past few years, recognized expert organizations such as the World Health Organization (WHO) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP) have repeatedly reviewed the current thresholds for mobile communications and confirmed that – if these values are complied with – the use of mobile technology is safe based on current scientific knowledge. National and international expert organizations will continue to regularly review the recommended thresholds.

We are convinced that mobile communications technology is safe if specific threshold values are complied with. We are supported in this conviction by the assessment of the recognized bodies. Our responsible approach to this issue finds expression in our Group-wide EMF Policy, with which we commit ourselves to more transparency, information, participation, and support of independent mobile communications research, far beyond that which is stipulated by legal requirements. We aim to overcome concerns among the general public by pursuing an objective, scientifically well-founded, and transparent information policy. We thus continue to see it as our duty to continue our trust-based dialog with local authorities and to ensure its successful progress. This particularly applies since our long-standing collaboration with municipalities to expand the mobile network was enshrined in law in 2013. Previously, this collaboration was based on voluntary self-commitments by the network operators.

Operational risks and opportunities


Risks arising from technology. We have an increasingly complex information/network technology (IT/NT) infrastructure, which we constantly expand and upgrade to ensure the best customer experience and consolidate our technology leadership. Outages in the current and also future technical infrastructure cannot be completely ruled out and could in individual cases result in revenue losses or increased costs. After all, our IT/NT resources and structures are the key organizational and technical platform for our operations. The ongoing convergence of IT and NT harbors risks. In order to counter these holistically, our technology, innovation, IT, and security activities are combined under the Board of Management department for Technology and Innovation.

Risks could arise in this area relating to all IT/NT systems and products that require internet access. For instance, faults between newly developed and existing IT/NT systems could cause interruptions to business processes, products, and services, such as smartphones and MagentaTV, or to connectivity for business customers. In order to avoid the risk of outages, e.g., due to natural disasters or fires, we use technical early warning systems and redundant IT/NT systems. The Computer Emergency Response Team (CERT) at Deutsche Telekom Security is in charge of protecting our business customers' servers. In cloud computing, all data and applications are stored at a data center. Our European data centers have security certification and meet strict data protection provisions and the EU regulations. All data relating to companies and private persons is protected from external access. Constant maintenance and automatic updates keep the security precautions up to date at all times. On the basis of a standardized Group-wide business continuity management (BCM) process, we also take organizational and technical measures to prevent damage from occurring or, if we cannot, to mitigate the subsequent effects. We also have insurance cover for insurable risks.  

T-Mobile US relies upon its systems and networks and the systems and networks of other providers and suppliers, to provide and support services. T-Mobile US' business, like that of most retailers and wireless companies, involves the receipt, storage, and transmission of customers' confidential information, including sensitive personal information, payment card information, and confidential information about their employees and suppliers, as well as other sensitive information about T-Mobile US, such as business plans, transactions, and intellectual property. Cyberattacks, such as denial of service and other malicious attacks, could disrupt T-Mobile US' internal systems, networks, and applications, impair its ability to provide services to customers, and have other adverse effects on its business.



In order to grow and remain competitive with new and evolving technologies in the industry, T-Mobile US will need to adapt to future changes in technology, continually invest in its network, increase network capacity, enhance existing offerings, including through digital channels, and introduce new offerings to address its current and potential customers' changing demands. If T-Mobile US is unable to take advantage of technological developments on a timely basis, then it may experience a decline in demand for its services or face challenges in implementing or evolving its business strategy. Following the business combination with Sprint, T-Mobile US operates and maintains several customer billing systems and will continue to run them until all of Sprint's legacy customers have been successfully migrated to T-Mobile US' existing billing systems. Unexpected difficulties or delays could cause major system or business disruptions. As the customer migration of Sprint customers is on track and the churn of legacy Sprint customers has been reduced, we have lowered the risk significance from "high" to "medium" of the risk category Technology Risks USA.

Opportunities arising from technology. The utilization of large data volumes (big data) from our networks can improve and speed up decision-making processes by enhancing transparency. It does so by shifting the basis for decisions from hypotheses to facts and, for example, enabling correlations to be recognized. In this way, machine learning can be used, for example, to manage the energy consumption of our technology in a forward-looking way based on the analysis of network data.

Our Systems Solutions operating segment covers innovative business areas in the digital transformation of business processes, such as cloud computing, edge computing, and cybersecurity. These business areas could develop faster than expected. As a pioneer of the digital transformation, we have an opportunity to actively shape market trends through a variety of projects in the fields of healthcare, public administration, and mobility solutions. Under these data-based digital business models, our partner-oriented approach is a highly promising way of contributing our core competencies – in cloud computing, edge computing, and cybersecurity – to various projects. In addition, we have references regarding strategic engagements in our focal sectors Automotive, Public Administration, Health, and Public Transport. We also see potential for development in the sovereign clouds environment.  

As a technology and development partner for toll collection business in Europe, we already have a strong competitive position. We have earned valuable references in European toll collection projects in Belgium and Austria and through the launch of a Europe-wide toll collection system (Toll4Europe). This will help to give us an edge over our competitors.

Procurement and supply risks. Deutsche Telekom cooperates with a variety of suppliers of technical (information and communication technology) and non-technical products and services. Products and services that might involve a higher risk include software and hardware, network technology components, and all products and services provided directly to end customers.


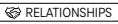
Deutsche Telekom's supply chains are currently being negatively impacted by a number of factors, e.g., by a shortage of semiconductor chips, the coronavirus pandemic, geopolitical tensions, e.g., between China and Taiwan, and the war in Ukraine. There has been an imbalance between supply and demand on the global market for semiconductor chips since 2021. In addition, pandemic-related restrictions (e.g., lockdowns in Asian countries in the form of temporary factory and seaport closures) and geopolitical tensions (e.g., technology sanctions imposed by the United States) were impeding the global logistics stability regarding raw and other materials. Furthermore, the general costs of semiconductor materials, production, global logistics, energy, and wages are rising, driven in part by inflation and exchange rates. This leads to general price rises for products and services. Europe is experiencing supply delays. However, short-term shortages were avoided thanks to countermeasures taken. Inventory shortages could also arise in the United States. The establishment of additional production capacities means that the situation regarding the availability of semiconductors is expected to ease in the medium term. Additional risks may also result from the dependence on individual suppliers or from individual vendors defaulting. This applies in particular for Chinese suppliers of telecommunications technology. We employ organizational, contractual, and procurement strategy measures to counteract these challenges. For example, in early 2021, the Group-wide Supply Chain Resilience task force was set up to assess the risk situation at regular intervals and, where necessary, take relevant mitigating measures, and monitor their implementation.  

Risks and opportunities arising from data privacy and data security

Data privacy. All Group companies are subject to specific data privacy regulations (in the EU especially the General Data Protection Regulation (GDPR)). These requirements must be implemented and their compliance must be monitored. Data privacy incidents could be sanctioned with extremely high fines (up to between 2 and 4 % of the global Group revenue). The European supervisory authorities' concept for fines has been applied. It stipulates very high fines even for violations with a low criticality. Despite mitigation measures and well-established data privacy management structures, it is not possible to fundamentally rule out data privacy incidents as almost all procedures/processes in the Group are relevant in terms of data protection. Errors may occur that are linked to reputation, cost, and sanction risks.



Since the introduction of the GDPR, data privacy law has been largely harmonized in Europe. As a Group with its focus in Europe, Deutsche Telekom has benefited from this, since the majority of special national data privacy regulations no longer apply and no longer have to be implemented in the individual entities in the European Union, reducing additional costs. In the recent past, European institutions have further strengthened data protection. On July 16, 2020, the European Court of Justice (ECJ) issued a landmark judgment on Schrems II. With this ruling, Europe's highest court addressed the concerns on the level of data protection in the United States and declared the adequacy decision of the EU Commission for the United States (Privacy Shield) void. Since then, our Group Privacy unit has worked with all affected Group units to implement the requirements arising from the ruling and the publications of the European Data Protection Board. Nevertheless, a residual risk remains since the authorities' regulatory practice has yet to be clarified. All companies in the EU, but also their contractual partners around the globe, must rise to the significant challenges of this ruling in order to be able to ensure data continues to be processed in compliance with data protection regulations going forwards. Group Privacy sees the current developments between the EU Commission and the United States concerning the conclusion of a new "EU-U.S. Data Privacy Framework" as an opportunity for greater legal certainty in international cooperation.



The new requirements also affect the Group's Privacy and Security Assessment (PSA) process. This process, which is now fully digital, meets the requirements of the GDPR with regard to carrying out a Privacy Impact Assessment for evaluating and documenting the risks posed by data processing. For example, a Transfer Impact Assessment was integrated in the PSA process. In all new procedures with a third-country involvement, all requirements from the ruling are taken into account and documented right from development. The new standard contractual clauses published by the European Commission in 2021 have been mandatory for all new agreements concluded since September 27, 2022. Under the Schrems II project, existing agreements with suppliers and partners in third countries were amended to take account of the new standard contractual clauses by the implementation deadline of December 27, 2022.



In addition, we have carefully examined technical developments and digital transformation projects to verify if they are in line with the Group strategy. Take, for example, the service app, which our customers can use to manage their Telekom products and contracts. In 2021, this standardized technical and data privacy-compliant solution was also launched in Germany. Another example is the German Corona-Warn-App and the subsequent European solution, which we continue to further develop together with the Robert Koch Institute, SAP, and other partners. Deutsche Telekom played a role in developing this app with partners, the Federal Government and other institutions.  

T-Systems signed the EU Cloud Code of Conduct (EU Cloud CoC) in 2021. After all, the EU Cloud is synonymous with something essential, namely, nothing less than the digital sovereignty of Europe in cloud services. This refers to the complete control of stored and processed data and independent decision-making on who can access the data. This requires clear rules and requirements, which is what the EU Cloud CoC offers. The European data protection authorities authorized this Code of Conduct. By becoming a signatory, the Company and hence also T-Systems undertakes to continue to increase the data protection level for cloud services in the interests of customers and European data protection. In this way they provide proof that data is processed in accordance with the requirements of the GDPR. Compliance with the rules is reviewed by an independent body.

However, since the ePrivacy Regulation has still not yet been adopted, there is yet another sector-specific regulatory challenge for the telecommunications sector in the EU. As telecommunications providers' data processing options are substantially restricted compared with what is possible under the GDPR, innovative big data and artificial intelligence applications in the field of telecommunications cannot realize the same kind of potential as those of companies that are only subject to the GDPR.

Data security. IT security continues to pose major challenges. In addition to preventive measures such as integrated security in business processes and measures to raise security awareness among employees, we counter these challenges with increased focus on the analysis of threats and cyber risks. This is where our early warning system comes in: It detects new sources and types of cyberattack, analyzes the behavior of the attackers while maintaining strict data privacy, and identifies new trends in the field of security. Along with the honeypot systems, which simulate vulnerabilities in IT systems, our early warning system includes alerts and analytical tools for spam mails, viruses, and Trojans. We exchange the information we obtain from all these systems with public and private bodies to detect new attack patterns and develop new protection systems.  

Cybercrime and industrial espionage are on the rise and they are becoming ever more complex due to rapidly advancing technologies and attack methods. As a result, we face constant challenges and adjustments to protect our customer and business partner data, as well as our networks, technologies, products, and services against these attacks. Such incidents can lead, among other things, to business disruptions, embezzlement, or unauthorized access to confidential or personal information, and to loss of reputation. Due to the rise in successful, significant cyberattacks against Deutsche Telekom in recent years, and on the basis of the updated financial evaluation of cyber risks, we have raised the risk significance of the risk category "Data privacy and data security" from "medium" to "high." We are addressing this development with comprehensive security concepts. In order to create greater transparency and thus be in a stronger position to tackle these threats, we are relying more and more on partnerships, e.g., with public and private organizations.   By means of the Security by Design principle, we have made security an integral part of our development process for new products and information systems. In addition, we carry out intensive and obligatory digital security tests.

We are continually striving to accelerate our growth through IT security solutions. To this end, we have combined our security units within Deutsche Telekom Security. We want to leverage this end-to-end security portfolio to secure market shares and score points with security concepts on the back of megatrends like the Internet of Things and Industry 4.0. We are also continuing to gradually expand our partner ecosystem in the area of cybersecurity.  

We provide regular updates on the latest developments in data protection and data security on our [website](#).

Other operational risks and opportunities

Employees. Our employees play a crucial role in the transformation of Deutsche Telekom. Their skills are a key factor to our business success. Both this success and our service provision are dependent on the ability to acquire, retain, and develop specialist staff and talents. Growing competition for experts and the war for talents, coupled with the need to offer increasingly flexible working conditions (e.g., remote working), could lead to key employees (in particular those in technical and IT-related roles) leaving the company, while demand continues to grow unabated. Sharply rising entry-level salaries could exacerbate the situation and increase costs further. The availability of staff with an appropriate skill set at nearshore and offshore sites is crucial when it comes to rendering services on budget, in line with requirements, and on time. The demands of the talents with regard to potential employers have also increased. Apart from remuneration, factors they care about include flexible working, environmental social governance, culture, diversity, and innovations. Due to the intensifying war for talents and potential salary-driven cost increases, we are raising the significance of the risk category “Other operational risks” from low to medium. We systematically work to address these challenges head on, for example, by strengthening Deutsche Telekom and T-Mobile US as an attractive employer brand and by proactively seeking out new specialist staff and talents worldwide.

In 2022, we once again used socially responsible measures to restructure the workforce in our Group. Early retirement models such as phased and dedicated retirement, and severance payments have been largely taken up, but also the training and placement of civil servants in the public sector by Vivento has proved very popular. The transformation with the associated staff restructuring is extremely important for achieving the Group's goals. Nevertheless, it is essential the restructuring is managed in a targeted way. That is why, for each request by an employee to take up a staff reduction instrument, it must be ensured on principle that the arrangement is voluntary on both sides (agreed by employee and manager), so as to avoid, for example, the loss of high performers.

The Company still employs numerous civil servants, who originally belonged to Group units of Deutsche Telekom that have since been sold. Where requested, these civil servants have been granted temporary leave from their civil servant status. However, there is a risk that they may return to us from a sold entity, for instance after the end of their temporary leave from civil servant status, without the Company being able to offer them jobs. Currently, 1,061 civil servants are entitled to return from outside the Group in this way (as of December 31, 2022), thus posing a risk.

Risks and opportunities relating to regulation



In the following section, we describe the main regulatory risks and opportunities that, as things currently stand, could affect our results of operations and financial position, and our reputation.

Regulatory risks arise from telecommunications-specific statutory regulations at the national, European, and U.S. level, and from the consequent powers of national authorities to regulate or intervene in the market and limit our freedom as regards product design and pricing. Deregulation can give rise to regulatory opportunities. Regulatory intervention, which we can only anticipate to a limited extent, may exacerbate existing price and competitive pressure. There are concerns that regulation in the United States, Germany, and other European countries may also impact revenue and earnings trends in the medium to long term.

Changes in regulatory policy and legislation

European legislation constantly influences our pricing and product design. After the European Electronic Communications Code (EECC) resulted in adjustments to national laws in the previous year, the EU Roaming Regulation entered into force on July 1, 2022. It extends the Roam Like at Home requirements for another ten years, establishes provisions for transparency and quality, and sets prices for charging between providers.

| For more information on the European roaming rules, please refer to the section “[Major regulatory decisions.](#)”

Policy decisions can give rise to risks, but also opportunities. The Federal Government's Digital Strategy adopted in August 2022 is a first step for potential further measures, for example, in connection with digitalization projects in administration or a modern legal framework for the data economy. The Gigabit Strategy contained therein aims, among other goals, to ensure nationwide fiber-optic coverage and state-of-the-art mobile technology. To this end, measures are expected in relation to approval processes or the realignment of the subsidized build-out, which could significantly affect conditions for the continued network build-out.  

| For more information on the Federal Government's digital strategy, please refer to the section “[Major regulatory decisions.](#)”

In view of the highly topical debates regarding the network security of critical infrastructure, the legislator has already announced adjustments in this regard, which will be implemented by regulatory and other authorities. This will lead to new requirements, for which the costs of implementation for Deutsche Telekom are not yet possible to estimate.

In the United States, too, new or amended wireless-related provisions and laws can increase the complexity of processes and lead to higher costs for T-Mobile US.

Awarding of spectrum

Risks could arise from the fact that inappropriate auction rules and frequency usage requirements, excessive reserve prices, or disproportionately high annual spectrum fees could jeopardize our planned acquisition of spectrum. Inappropriate conditions for the awarding of spectrum can include, for example, extensive build-out requirements and, in some cases, requirements to grant network access (national roaming, service provider access). By contrast, we see an opportunity in particular in the fact that such spectrum award procedures enable mobile network operators to obtain the optimum amount of spectrum for their future business. We would thus be equipped for further growth and innovation. The upcoming award procedures mainly relate to the auctioning of additional spectrum in the 700 MHz, 800 MHz, 900 MHz, 1,800 MHz, 3,400 to 3,800 MHz, and the 26,000 MHz ranges. In addition, spectrum licenses, especially in the 2,100 MHz and 2,600 MHz ranges, will expire by 2024 in some countries and need to be renewed. Major award procedures are currently being prepared, primarily in Croatia, Austria, Poland, Hungary, Slovakia, and the Czech Republic. In Germany, consultations were held regarding the 800 MHz, 1,800 MHz, and 2,600 MHz bands to determine which award procedure to select (auction or extension). A final decision on this has not yet been made.

For further information on spectrum auctions that were completed in 2022 or are still ongoing, please refer to the section "[Major regulatory decisions.](#)"

Areas in which national regulators may intervene

European and national laws and regulations grant national regulators extensive powers of intervention.

Our Group companies in Germany and Europe continue to be subject to extensive **regulation of wholesale products**, obligating us to make our network and services available to our competitors wherever we are deemed to have significant market power as an operator. The national regulators regularly check and determine the corresponding terms, conditions, and prices of these wholesale offerings. The key wholesale products subject to regulation are unbundled local loop lines, bitstream products, leased lines, and the associated services.

In July 2022, the Bundesnetzagentur published its decision on the future **regulation of access to Deutsche Telekom's copper and fiber-optic network**. With this decision, rules for FTTH networks are laid down, the previous regulation for Layer2 (VDSL) is discontinued, and access to ducts and poles is also imposed. The precise access conditions will be set down in the subsequent procedures, by means of which the authority will influence Deutsche Telekom's pricing and product design.

For further information, please refer to the section "[Major regulatory decisions.](#)"

Within the scope of the subsidized network build-out, companies have an obligation to ensure access to the subsidized network. The Bundesnetzagentur can be called on to settle disputes. Since 2021, termination rates have been determined directly by the European Commission by way of a **delegated act**. In addition, European and national **consumer protection regulations** apply.

In addition to the requirements of telecommunications law, our media products are also subject to special European and national regulations under **media law**, as well as non-sector-specific regulations such as data and consumer protection. These include, in the broader sense, copyright law, regulations concerning the responsibility for published content, requirements in relation to ensuring the protection of minors in the media, and requirements in relation to the content and user interfaces of media distribution platforms. Barring any changes to its shareholder structure on the one hand (the Federal Republic and KfW being its major shareholders), or to the legal situation, or the prevailing opinions of media regulators on the other, it is unlikely that Telekom Deutschland will be granted a license to broadcast radio and TV programs.

Litigation

Major ongoing legal proceedings

Deutsche Telekom is party to proceedings both in and out of court with government agencies, competitors, and other parties. The proceedings listed below are of particular importance from our perspective. If, in extremely rare cases, required disclosures on individual litigation and anti-trust proceedings are not made, we concluded that these disclosures may seriously undermine the outcome of the relevant proceedings.

Prospectus liability proceedings (third public offering, or DT3). This relates to initially around 2,600 ongoing lawsuits from some 16,000 alleged buyers of T-Shares sold on the basis of the prospectus published on May 26, 2000. The plaintiffs assert that individual figures given in this prospectus were inaccurate or incomplete. The amount originally in dispute totaled approximately EUR 78 million plus interest. Some of the actions are also directed at KfW and/or the Federal Republic of Germany as well as the banks that handled the issuances. The Frankfurt/Main Regional Court had issued orders for reference to the Frankfurt/Main Higher Regional Court in accordance with the German Capital Investor Model Proceedings Act (Kapitalanleger-Musterverfahrensgesetz – KapMuG) and has temporarily suspended the initial proceedings. On May 16, 2012, the Frankfurt/Main Higher Regional Court had ruled that there were no material errors in Deutsche Telekom AG's prospectus. In its decision on October 21, 2014, the Federal Court of Justice partly revoked this ruling, determined that there was a mistake in the prospectus, and referred the case back to the Frankfurt/Main Higher Regional Court. On November 30, 2016, the Frankfurt/Main Higher Regional Court ruled that the mistake in the prospectus identified by the Federal Court of Justice could result in liability on the part of Deutsche Telekom AG, although the details of that liability would have to be established in the initial proceedings. Following an appeal from both parties, in February 2021, the Federal Court of Justice once again referred the proceedings back to the Frankfurt/Main Higher Regional Court for further consideration. In November 2021, Deutsche Telekom AG presented a settlement concept under which a concrete settlement offer is to be made to every eligible plaintiff. The settlement offers are made without any judicial decision and do not constitute an admission of liability on the part of Deutsche Telekom AG. Settlements have now been agreed with the majority of the eligible plaintiffs. Deutsche Telekom AG has recognized appropriate provisions for risk in the statement of financial position.

Claims relating to charges for the shared use of cable ducts. In 2012, Kabel Deutschland Vertrieb und Service GmbH (today Vodafone Deutschland GmbH (VDG)) filed a claim against Telekom Deutschland GmbH to reduce the annual charge for the rights to use cable duct capacities. In similar proceedings, the then Unitymedia Hessen GmbH & Co. KG, Unitymedia NRW GmbH, and Kabel BW GmbH (today all Vodafone West) filed claims against Telekom Deutschland GmbH in January 2013, demanding that it cease charging the plaintiffs more than a specific and precisely stated amount for the shared use of cable ducts, including in the future. The claims were rejected by the Frankfurt Higher Regional Court (VDG) and by the Düsseldorf Higher Regional Court (Vodafone West) and an appeal was not allowed in both cases. In response to the complaints of the plaintiffs against non-allowance of appeal, the Federal Court of Justice allowed the appeal by VDG to the extent that it relates to claims dating from January 1, 2012; the appeal by Vodafone West was allowed to the extent that it relates to claims dating from January 1, 2016. The claims were rejected with legally binding effect for the time periods prior to this. In a ruling on December 14, 2021, the Federal Court of Justice referred the proceedings concerning the remaining claims back to the responsible Higher Regional Courts for a new hearing and decision. VDG has since updated its claim, which it now puts at around EUR 749 million plus interest for the period from January 2012 to December 2021. The plaintiff Vodafone West has also updated its claim, which it now puts at around EUR 418 million plus interest for the period from January 2016 to June 2022. At present the financial impact of both these proceedings cannot be assessed with sufficient certainty.

Sprint Merger class action. On June 1, 2021, a shareholder class action and derivative action was filed in the Delaware Court of Chancery against Deutsche Telekom AG, SoftBank, T-Mobile US, and all of our officers and directors at that time, asserting a breach of fiduciary duties relating to the purchase price amendment to the Merger Agreement, as well as SoftBank's subsequent monetization of its T-Mobile US shares. On October 29, 2021, the complaint was amended. The amended complaint is directed at the same defendants and the same underlying transactions as in the original action; however, it includes additional submission on alleged facts. At present, the financial impact of these proceedings cannot be assessed with sufficient certainty.

Proceedings against T-Mobile US in consequence of the cyberattack on T-Mobile US in August 2021. In August 2021, T-Mobile US confirmed that their systems had been subject to a criminal cyberattack that compromised data of millions of their customers, former customers, and prospective customers. With the assistance of outside cybersecurity experts, T-Mobile US located and closed the unauthorized access to their systems and identified customers whose information was impacted and notified them, consistent with state and federal requirements. As a result of the cyberattack, numerous consumer class actions including mass arbitrations were filed against T-Mobile US. The class actions brought before the federal courts were consolidated into one action in December 2021. The plaintiffs are claiming damages in an as yet unspecified amount. On July 22, 2022, T-Mobile US entered into an agreement to settle the consumer class action in the Federal Court for USD 350 million (EUR 331 million). In addition, T-Mobile US has committed to spending a total of USD 150 million in 2022 and 2023 on data security and related technologies. The settlement is subject to final court approval. T-Mobile US expects that the settlement of the consumer class action, if approved by the court, together with further settlements already or still to be concluded with consumers, will satisfy essentially all claims asserted to date by current, former, and potential customers affected by the cyberattack in 2021. T-Mobile US has recognized corresponding provisions for risks in the statement of financial position of around USD 0.3 billion (EUR 0.3 billion).

Furthermore, in November 2021, a derivative action was brought against the members of the Board of Directors of T-Mobile US and against T-Mobile US as nominal defendant. This action has since been withdrawn. In September 2022, a further purported shareholder filed a new derivative action against the members of the Board of Directors of T-Mobile US and against T-Mobile US as nominal defendant alleging claims for breach of fiduciary duties relating to the company's cybersecurity practices. It is currently not possible to estimate the resultant financial risk with sufficient certainty.

In addition, inquiries have been made by various government agencies, law enforcement and other state authorities, with which T-Mobile US is cooperating in full. At present the financial impact of these proceedings cannot be assessed with sufficient certainty.

Proceedings against T-Mobile US in consequence of the cyberattack on T-Mobile US in January 2023. On January 5, 2023 T-Mobile US identified that a bad actor was obtaining data through an application programming interface (API). Based on the company's preliminary investigation, the affected API was only able to provide a limited set of customer account data, including name, billing address, email address, telephone number, date of birth, T-Mobile account number, and information such as the number of lines on the account and plan features. The preliminary results of the investigation indicate that, in total, around 37 million current postpaid and prepaid customer accounts were affected, although many of these accounts did not include the full data set. Based on an initial assessment, T-Mobile US assumes that the attacker retrieved data via the affected API for the first time from or around November 25, 2022. The company continues to investigate the incident and, in accordance with federal and state requirements, has notified those individuals whose data was affected. In connection with this cyberattack, consumer class actions were filed against T-Mobile US and official inquiries were submitted to the company, to which it will respond and, as a result of which, it may incur substantial expenses. It is currently not possible to estimate the resultant financial risk with sufficient certainty.

Patents and licenses. Like many other large telecommunications and internet providers, Deutsche Telekom is exposed to a growing number of intellectual property rights disputes. There is a risk that we may have to pay license fees and/or compensation; we are also exposed to a risk of cease-and-desist orders, for example relating to the sale of a product or the use of a technology.

Further, Deutsche Telekom intends to defend itself and/or pursue its claims vigorously in each of these proceedings.

Anti-trust proceedings

Like all companies, our Group is subject to anti-trust law. In recent years, we have notably stepped up our compliance efforts in this area too. Nevertheless, Deutsche Telekom and its subsidiaries are from time to time subject to proceedings under anti-trust law or follow-on damage actions under civil law. In the following, we describe material anti-trust proceedings and resulting claims for damages.

Claims for damages against Slovak Telekom following a European Commission decision to impose fines. The European Commission decided on October 15, 2014 that Slovak Telekom had abused its market power on the Slovak broadband market and as a result imposed fines on Slovak Telekom and Deutsche Telekom AG, which were paid in full in January 2015. After the General Court of the European Union partially overturned the European Commission's decision in 2018 and reduced the fines by a total of EUR 13 million, the legal recourse following the ruling of the European Court of Justice on March 25, 2021 is exhausted. Following the decision of the European Commission, competitors filed damage actions against Slovak Telekom with the civil court in Bratislava. These claims seek compensation for alleged damages due to Slovak Telekom's abuse of a dominant market position, as determined by the European Commission. A further claim was filed with the court in the reporting period, such that there are now three claims pending, amounting to a total of EUR 219 million plus interest. It is currently not possible to estimate the financial impact with sufficient certainty.

Claims for damages against Deutsche Telekom AG, including due to insolvency of Phones4U. Phones4U was an independent British mobile retailer, which declared insolvency in 2014. The insolvency administrator is pursuing claims before the High Court of Justice in London against the mobile providers active on the UK market at that time and their parent companies on the grounds of alleged collusion in violation of anti-trust law and breach of contract. Deutsche Telekom AG, which at that time held 50 % of the mobile company EE Limited, has rejected the claims as unsubstantiated. The High Court of Justice in London heard testimony from several witnesses and experts in the period between mid-May and the end of July 2022 with a view to establishing the legal basis for a claim. Phones4U is still seeking damages in an as yet undisclosed amount. It is currently not possible to estimate the financial impact with sufficient certainty.

Compliance risks

Compliance risks are risks arising from systematic infringements of legal or ethical standards that could result in regulatory or criminal liability on the part of the company, its executive body members, or employees, or result in a significant loss of reputation. In order to minimize these risks, we have set up a compliance management system.

For further information on the compliance management system, please refer to “Aspect 5: Fighting corruption” in the section “Combined non-financial statement.”

Financial risks and opportunities

Liquidity, credit, currency, interest rate risks

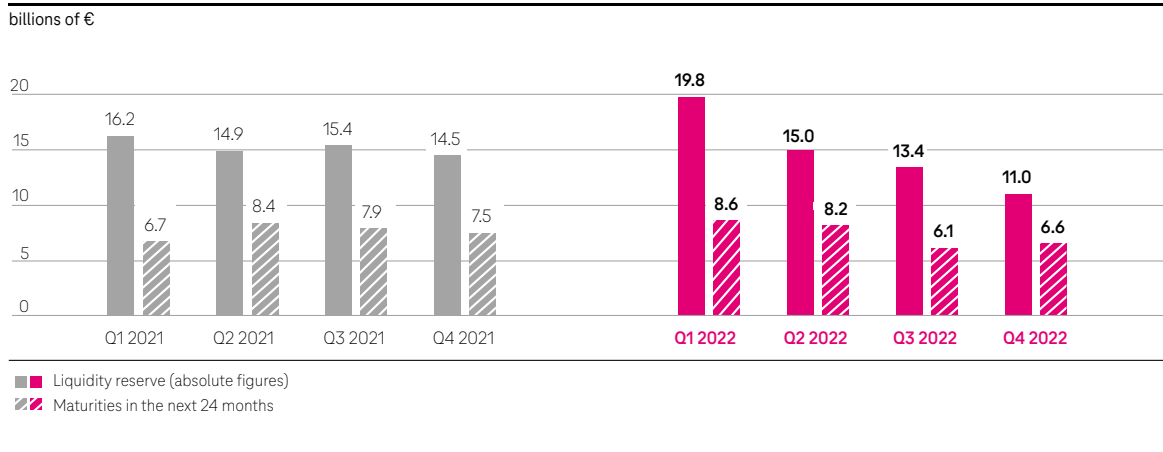
With regard to its assets, liabilities, and planned transactions, our Group is particularly exposed to liquidity risks, credit risks, and the risk of changes in exchange rates and interest rates. We want to contain these risks. Risks with an impact on cash flows are monitored in a standard process and hedged accordingly using derivative and non-derivative hedges. Derivative financial instruments are used solely for hedging and never for speculative purposes. The following risk areas – liquidity, credit, currency, and interest rate risks – are evaluated taking into account all hedges.

For further information on the risk assessment, please refer to the “Corporate risks” table above.

Liquidity risk. To ensure the Group’s and Deutsche Telekom AG’s solvency and financial flexibility at all times, we maintain a liquidity reserve in the form of credit lines and cash as part of our liquidity management. Since the successful business combination of T-Mobile US and Sprint, T-Mobile US has pursued its own separate financing and liquidity strategy.

Deutsche Telekom (excluding T-Mobile US): Primarily bilateral credit agreements with 21 banks with an aggregate total volume of EUR 12.6 billion were available as of December 31, 2022, of which EUR 0.2 billion were utilized. Our liquidity reserve covered maturing bonds and long-term loans at all times for at least the next 24 months (see graphic below).

Development of the liquidity reserve (excluding T-Mobile US), maturities in 2021/2022



Furthermore, bilateral credit lines with an aggregate total volume of USD 7.5 billion (EUR 7.0 billion) plus a cash balance of USD 4.6 billion (EUR 4.3 billion) were available to T-Mobile US as of December 31, 2022.

Credit risks. In our operating business and certain banking activities, we are exposed to a credit risk, i.e., the risk that a counterparty will not fulfill its contractual obligations. To keep this credit risk to a minimum, we conclude transactions with regard to financing activities only with counterparties that have at least a credit rating of BBB+/Baa1; we also actively manage limits. In addition, we have concluded collateral agreements for our derivative transactions. At the level of operations, the outstanding debts are continuously monitored in each area, i.e., locally.

Currency risks. Currency risks result from investments, financing measures, and operations. Risks from foreign currency fluctuations are hedged on a pro rata basis depending on their probability of occurrence, if they affect the Group’s cash flows (transaction risks). However, foreign-currency risks that do not influence the Group’s cash flows, for example, risks resulting from the translation of assets and liabilities of foreign operations into euros (translation risks) are generally not hedged. Deutsche Telekom may nevertheless also hedge these foreign-currency risks under certain circumstances.

Interest rate risks. Our interest rate risks mainly result from Group financing: On the one hand, we have an interest rate risk relating to the issue of new liabilities, and on the other, we have an interest rate risk arising from variable-interest liabilities. The euro interest rate position is actively managed as part of our interest rate management activities. Each year, a maximum is set for the percentage of variable-interest liabilities, taking into account the planned finance costs. The USD debt position of T-Mobile US primarily comprises partially cancelable, fixed-income bonds.

For further information, please refer to Note 42 "[Financial instruments and risk management](#)" in the notes to the consolidated financial statements.

Tax risks

We are subject to the applicable tax laws in many different countries. Risks can arise from changes in local taxation laws or case law and different interpretations of existing provisions. These risks can impact both our tax expense and benefit as well as tax receivables and liabilities.

Other financial risks and opportunities


This section contains information on other financial risks that we consider to be immaterial at present or cannot evaluate based on current knowledge.

Rating risk. Deutsche Telekom's credit rating affects our access to the capital markets, to the international finance markets, and our refinancing costs. A lower rating could impede access to the capital market and, over time, would lead to an increase in the cost of debt financing. We intend to maintain our rating in a corridor from A- to BBB and thereby safeguard undisputed access to the capital market. As of December 31, 2022, Deutsche Telekom AG's credit rating with Moody's was Baa1 with a stable outlook, while Standard & Poor's rated us BBB with a positive outlook, and Fitch BBB+ with a stable outlook. From today's perspective, access to the international debt capital markets for both Deutsche Telekom AG and T-Mobile US is not jeopardized.

Energy. The war in Ukraine and the current situation on the world market are driving sharp rises in energy costs. Energy prices are highly volatile. Further increases in electricity, gas, and oil prices are possible, which could drive up energy, transportation, and manufacturing costs. Depending on the market conditions, our national companies pursue different procurement strategies whereby attempts are made to balance long-term supply reliability, appropriate prices, and favorable market trends.

Control environment. Compliance with business and regulatory requirements in particular for internal controls requires high efforts. Not meeting these demands could lead to difficulties or weaknesses in the overall control environment of Deutsche Telekom and could result in inaccurate financial statements.

Sales of shares by the Federal Republic or KfW Bankengruppe. As of December 31, 2022, the Federal Republic and KfW Bankengruppe jointly held 30.5 % in Deutsche Telekom AG. It is possible that the Federal Republic will continue its policy of privatization and sell further equity interests in a manner designed not to disrupt the capital markets and with the involvement of KfW Bankengruppe. There is a risk that the sale of a significant volume of shares by the Federal Republic or KfW Bankengruppe, or any speculation to this effect, could have a negative impact on the price of the T-Share.

Impact of the CR strategy on the value of the Company.   Growing numbers of investors take sustainability aspects into account in their investment decisions (Socially Responsible Investments, SRI). SRI investment products consist of securities from companies that have been reviewed based on environmental, social, and governance (ESG) criteria. The development of demand from socially responsible investors for the T-Share is an indicator we can use to assess our sustainability performance. The Socially Responsible Investment ESG KPI indicates the percentage of Deutsche Telekom AG shares held by such investors. Our commitment to greater sustainability is paying off: as of December 31, 2022, around 31.3 % of all T-Shares were held by investors who show concern for environmental, social, and governance criteria in their investment choices. We have refined the methodology and underlying data and have switched to monitoring the sustainably managed shares at fund level and no longer at an institutional level. For better comparability with other companies, the total number of shares given pertains to the number of Deutsche Telekom shares in free float.

Impairment of Deutsche Telekom AG's assets. The value of the assets of Deutsche Telekom AG and its subsidiaries is reviewed periodically. In addition to the regular annual measurements that are also performed for the carrying amounts of investments in the annual financial statements of Deutsche Telekom AG prepared in accordance with German GAAP, specific impairment tests may be carried out, for example, where changes in the economic, regulatory, business, or political environment suggest that the value of goodwill, intangible assets, property, plant and equipment, investments accounted for using the equity method, or other financial assets might have decreased. These tests may lead to the recognition of impairment losses that do not, however, result in cash outflows. This could impact to a considerable extent on our results, which in turn may negatively affect the T-Share price.

For further information, please refer to the section "[Summary of accounting policies – Judgments and estimates](#)" in the notes to the consolidated financial statements.

Governance and other disclosures

Governance

As of December 31, 2022, **Board of Management** responsibilities were distributed across eight Board departments.

Four of these cover cross-functional management areas

- Chairman of the Board of Management

and the Board of Management departments

- Finance
- Human Resources and Legal Affairs
- Technology and Innovation.

In addition, there are four segment-based Board of Management departments:

- Germany
- Europe
- T-Systems
- USA and Group Development

Composition of the Board of Management as of December 31, 2022

Members of the Board of Management	Department
Timotheus Höttges	Chairman of the Board of Management (CEO)
Adel Al-Saleh	T-Systems
Birgit Bohle	Human Resources and Legal Affairs
Srini Gopalan	Germany
Dr. Christian P. Illek	Finance (CFO)
Thorsten Langheim	USA and Group Development
Dominique Leroy	Europe
Claudia Nemat	Technology and Innovation

On December 15, 2021, Timotheus Höttges' appointment as Chairman of the Board of Management was canceled effective December 31, 2021, and he was reappointed as Chairman of the Board of Management for the period from January 1, 2022 through December 31, 2026. On February 25, 2021, Birgit Bohle was reappointed as the Board of Management member for Human Resources and Legal Affairs for the period from January 1, 2022 through December 31, 2026. Also on February 25, 2021, Thorsten Langheim was reappointed as the Board of Management member for USA and Group Development for the period from January 1, 2022 through December 31, 2026. By resolution of February 23, 2022, Adel Al-Saleh was reappointed as the Board member responsible for T-Systems for the period from January 1, 2023 to December 31, 2027. By resolution of May 19, 2022, Dr. Christian P. Illek was reappointed as the Board member responsible for Finance for the period from April 1, 2023 to March 31, 2028. By resolution of December 14, 2022, Dominique Leroy was reappointed as the Board member responsible for Europe for the period from November 1, 2023 to October 31, 2028.

The members of the Board of Management are appointed and discharged in accordance with § 84 and § 85 of the German Stock Corporation Act (Aktiengesetz – AktG) and § 31 of the German Codetermination Act (Mitbestimmungsgesetz – MitbestG).

The **Supervisory Board** of Deutsche Telekom AG advises the Board of Management and oversees its management of business. It is composed of 20 members: 10 represent the shareholders and 10 the employees. The employees' representatives were most recently appointed at the delegates' assembly on November 20, 2018.

Amendments to the Articles of Incorporation are made pursuant to § 179 and § 133 AktG and § 18 and § 21 of the Articles of Incorporation. According to § 21 of the Articles of Incorporation, the Supervisory Board is authorized, without a resolution by the shareholders' meeting, to adjust the Articles of Incorporation to comply with new legal provisions that become binding for the Company and to amend the wording of the Articles of Incorporation.

At the 2022 shareholders' meeting, held on April 7, 2022, the shareholders of Deutsche Telekom AG elected Dr. Frank Appel as a member of Deutsche Telekom AG's Supervisory Board. The Supervisory Board then elected Dr. Appel as the new Chairman of the Supervisory Board, as successor to Prof. Ulrich Lehner, who left the Supervisory Board with effect from the end of the shareholders' meeting.

The **remuneration system** for the Board of Management provides incentives to successfully implement the corporate strategy, to ensure a sustainable development of the Company, and is also focused on creating long-term value for our shareholders. The remuneration received by the members of the Supervisory Board is specified under § 13 of the Articles of Incorporation of Deutsche Telekom AG. Under the remuneration system, members of the Supervisory Board received fixed annual remuneration. The recommendations of the German Corporate Governance Code (GCGC), as published in the Federal Gazette on June 27, 2022, on "Remuneration of the Management Board and the Supervisory Board" (Section G) were complied with.

Detailed information on the remuneration of the Board of Management and the Supervisory Board is published in the separate [remuneration report](#).

Members of the Board of Management and Supervisory Board of Deutsche Telekom AG were reported to have purchased and transferred 447,898 shares (2021: 308,258) and sold 65,460 shares (2021: 0) inter alia under the Share Matching Plan and as personal investments in the course of 2022. Total direct or indirect **shareholdings** in the Company or associated financial instruments by members of the Board of Management and the Supervisory Board do not exceed 1% of the shares issued by the Company.

Significant events after the reporting period

For information on events after the reporting period, please refer to Note 48 “Events after the reporting period” in the notes to the consolidated financial statements and to the notes to the annual financial statements of Deutsche Telekom AG as of December 31, 2022.

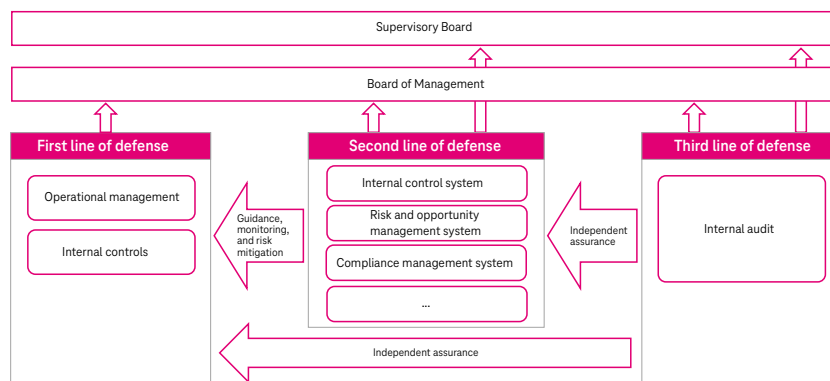
Integrated control and monitoring system^a

Sound corporate governance based on sustainable value creation is particularly important for an international group such as Deutsche Telekom, with its many subsidiaries and associates. The Supervisory Board and the Board of Management are convinced that such corporate governance, taking both company and industry-specific issues equally into account, is an important building block for the future success of Deutsche Telekom AG. Accordingly, responsibility for compliance with the principles of sound corporate governance is vested in senior management.

Responsible, risk-appropriate handling of risks and opportunities is a core component of our corporate governance. The various systems implemented by the Board of Management (in particular the internal control system and the risk and opportunity management system including the compliance management system) to record and mitigate risks work together as part of a mutually complementary control and monitoring system and are subject to review by Internal Audit.

With this integrated system, Deutsche Telekom follows the “Three lines of defense” model. The operational units and their operational management, i.e., the risk owners, form the first line of defense. They are responsible for identifying, assessing, and continuously monitoring risks. The second line of defense primarily comprises the internal control system, the risk and opportunity management system, and the compliance management system, and it serves to manage and monitor the first line of defense. This includes defining requirements, guidelines, and processes, monitoring risks, and reporting to the Board of Management and to the Supervisory Board of Deutsche Telekom AG and its Audit Committee. The third line of defense is Internal Audit, which ensures the first and second lines of defense are audited and advised objectively and independently.

Three lines of defense model



The most important features of the internal control system and the risk and opportunity management system including the compliance management system are described below.

Internal control system



Deutsche Telekom AG’s internal control system (ICS) is based on the internationally recognized COSO (Committee of Sponsoring Organizations of the Treadway Commission) Internal Control – Integrated Framework, COSO I, as amended on May 14, 2013. The ICS is an integral component of the functional management of the Group.

^a Information in this section is information extraneous to the management report as explained in the section “Introductory remarks.”

The Audit Committee of the Supervisory Board of Deutsche Telekom AG monitors the effectiveness of the ICS as required by § 107 (3) sentence 2 AktG in conjunction with § 107 (4) sentence 1 AktG. The Board of Management is responsible for defining the scope and structure of the ICS at its discretion in accordance with § 91 (3) AktG. The ICS supports the organizational implementation of the Board of Management's decisions. This includes achieving the business targets, proper and reliable accounting, and compliance with significant legal requirements and regulations. Sustainability aspects, which are continuously developed on the basis of regulatory requirements, are also taken into consideration.

Internal Audit is responsible for independently reviewing the appropriateness and effectiveness of the ICS in the Group and at Deutsche Telekom AG, and, to comply with this task, has comprehensive information, audit, and inspection rights and is involved across all levels of the ICS process.

In addition to protecting against financial reporting risks, the ICS also ensures general management of operational risks and compliance. Its functional and process-related focus is adapted to the Group's current risk situation on an annual basis. The ICS organization bundles and integrates the internal control processes and supports the Board of Management in designing, implementing, and maintaining an appropriate and effective control system. It comprises ICS Management at Group Headquarters and the local ICS management of each entity. Central ICS Management is responsible for managing and coordinating the ICS processes in their entirety.

The entities to be included in the ICS are also reviewed and identified annually on the basis of Deutsche Telekom's statement of investment holdings. All material entities are fully integrated in the ICS process. This also means that the controls are documented in a Group-wide IT system and are reviewed for their appropriateness and effectiveness at least once a year. Consistent Group-wide minimum requirements for the entities' control systems are defined based on the key Group functions. These include, for example, accounting, IT, procurement, HR, security, data privacy, taxes, compliance, and also corporate responsibility.  

Effectiveness is regularly reviewed applying the dual-checking principle and, depending on the risk exposure of the controls within the functional unit, across departments or (additionally) by Internal Audit. The aim is to identify control gaps and non-effective controls, in particular to analyze the impact on financial reporting and to initiate and monitor suitable countermeasures.

The ICS process is completed with a cascaded approval process, starting with the function owners in the entities and the local finance and managing directors, through to Group level. The ICS Steering Committee, with the involvement of the Group's most important function owners, then evaluates the results and makes recommendations to the Board of Management. Based on this, the Board of Management decides on the appropriateness and effectiveness of the ICS twice a year. The Audit Committee is informed in detail on the status and results of the ICS process at least three times a year and discusses the alignment of the ICS with management and the external auditors. Nevertheless, there are inherent limitations in every ICS. No control system – even if it is deemed to be appropriate and effective – can ensure that all relevant control risks are identified and are being completely and effectively addressed by means of controls.

All non-material entities exposed to risks with an extent that is deemed to be low from a Group perspective, are included in the Group-wide ICS as part of a simplified and standardized process. These entities must submit an annual self-declaration, based on a control risk catalog, on the maturity of the implemented controls and a statement on the effectiveness of the ICS in their entity. Internal Audit regularly reviews these self-declarations in a risk-oriented way. The ICS Steering Committee, the Board of Management, and the Audit Committee are informed at least once a year about the results of the self-assessments.

For information on the accounting-related internal control system, please refer to the section "[Accounting-related internal control system.](#)"

Risk and opportunity management system

Our risk and opportunity management system is based on the globally applicable risk management standard ISO 31000 "Risk management – Principles and guidelines." It serves as a guide for internationally recognized risk management systems. A risk and opportunity management system is necessary from both a business point of view and on the basis of laws and regulations, in particular § 91 (2) and (3) of the German Stock Corporation Act (Aktiengesetz – AktG). Our risk and opportunity management system is organized on a decentralized basis. The Group Risk Governance unit defines the Group-wide methods, including the associated reporting system, and the segments are integrated via their own risk and opportunity management. The relevant owners in each of the segments are responsible for identifying, assessing, and continuously monitoring risks. This is also at the core of our risk culture, which includes the motto "Everyone is a risk manager." In other words, every individual takes responsibility for their risks.

For further information on the risk and opportunity management system, please refer to the section "[Risk and opportunity management system.](#)"

Compliance management system SDG 8 RELATIONSHIPS

Our compliance culture is a key component for corporate governance based on integrity and respect. We have expressed our Group-wide commitment to complying with ethical principles and both legal and statutory requirements. We have incorporated this pledge in our Guiding Principles and our Code of Conduct.

We implemented a compliance management system with the aim of minimizing risks arising from systematic infringements of legal or ethical standards that could result in regulatory or criminal liability on the part of the Company, its executive body members, or employees, or result in a significant loss of reputation. In particular, when we established the compliance management system to prevent corruption, we used the Principles for the Proper Performance of Reasonable Assurance Engagements Relating to Compliance Management Systems laid down in IDW Assurance Standard 980 as a basis. The Board of Management considers its overall responsibility for compliance as a key leadership task. Our Chief Compliance Officer is responsible for the design and management of the compliance management system. Compliance officers implement the compliance management system and our compliance goals locally at the level of our operating segments and national companies.

For further information on the compliance management system, please refer to “[Aspect 5: Fighting corruption](#)” in the section “[Combined non-financial statement](#).”

Statement of effectiveness

Based on regular discussions about the internal control system and the risk and opportunity management system, including the Group risk report and the ICS report, the Board of Management is not aware of any circumstances as of the date of preparation of the combined management report which contradict the appropriateness and effectiveness of these systems in their entirety. In addition, at the end of 2022/start of 2023, an external audit of risk and opportunity management was carried out in accordance with IDW Auditing Standard 981. Based on the information currently available, this audit did not uncover any reasons that cast doubt on the appropriateness or effectiveness.

Accounting-related internal control system

The accounting-related ICS comprises the principles, methods, and measures used to ensure appropriate accounting. It is continuously being refined and aims to ensure the consolidated financial statements of Deutsche Telekom are prepared in accordance with the International Financial Reporting Standards (IFRS) as adopted by the European Union, as well as with the regulations under commercial law as set forth in § 315e (1) HGB. Another objective of the accounting-related ICS is the preparation of the annual financial statements of Deutsche Telekom AG and the combined management report in accordance with German GAAP.

It is generally true of any ICS that regardless of how it is specifically structured there can be no absolute guarantee that it will achieve its objectives. Therefore, as regards the accounting-related ICS, there can only ever be relative, but no absolute, certainty that material accounting misstatements can be prevented or detected.

Group Accounting manages the processes of Group accounting and management reporting. Legal provisions, accounting standards, and other pronouncements are continuously analyzed as to whether and to what extent they are relevant and how they impact on financial reporting. The relevant requirements are defined in the Group Accounting Manual, for example, communicated to the relevant units and, together with the financial reporting calendar that is binding throughout the Group, form the basis of the financial reporting process. In addition, supplementary process directives such as the Intercompany Policy, standardized reporting formats, IT systems, as well as IT-based reporting and consolidation processes support the process of uniform and compliant Group accounting. Where necessary, we also draw on the services of external experts, for example, to measure pension obligations or in connection with purchase price allocations. Group Accounting ensures that these requirements are complied with consistently throughout the Group. The staff involved in the accounting process receive regular training. Deutsche Telekom AG and the Group companies are responsible for ensuring that Group-wide policies, regulations, and procedures are complied with. The Group companies ensure the compliance and timeliness of their accounting-related processes and systems and, in doing so, are supported and monitored by Group Accounting.

Operational accounting processes at the national and international level are increasingly managed by our shared service centers. Harmonizing the processes enhances their efficiency and quality and, in turn, improves the reliability of the internal ICS. The ICS thus safeguards both the quality of internal processes at the shared service centers and the interfaces to the Group companies by means of adequate controls and an internal certification process.

Internal controls are embedded in the accounting process depending on risk levels. The accounting-related ICS comprises both preventive and detective controls, which include:

- IT-based and manual matching
- The segregation of functions
- The dual-checking principle
- Monitoring controls
- General IT checks such as access management in IT systems, and change management

Central and local ICS management continuously develop the ICS further in line with the operational processes, systematically responding to new technologies and ways of working. These include the use of software robots, real-time alarms, artificial intelligence, and agile working.

We have implemented a standardized process throughout the Group for monitoring the effectiveness of the accounting-related ICS. This process systematically focuses on risks of possible misstatements in the consolidated financial statements. At the beginning of the year, specific accounts and accounting-related process steps are selected based on risk factors. They are then reviewed for effectiveness in the course of the year. If control weaknesses are found, they are analyzed and assessed, particularly in terms of their impact on the consolidated financial statements and the combined management report. Material control weaknesses, the action plans for eradicating them, and ongoing progress are reported to the Board of Management and additionally to the Audit Committee of the Supervisory Board of Deutsche Telekom AG. In order to ensure a high-quality accounting-related ICS, Internal Audit is closely involved in all stages of the process.

Corporate Governance Statement and Declaration of Conformity

The Corporate Governance Statement pursuant to § 289f, § 315d HGB is available on our [Investor Relations website](#). The Declaration of Conformity pursuant to § 161 AktG can be found below:

- I. The Board of Management and the Supervisory Board of Deutsche Telekom AG hereby declare that in the period since submission of the most recent declaration of conformity pursuant to § 161 AktG on December 30, 2021, Deutsche Telekom AG has complied with the recommendations of the Government Commission on the German Corporate Governance Code announced by the Federal Ministry of Justice on March 20, 2020, in the official section of the Federal Gazette (Bundesanzeiger), with the exception of recommendation C.5 (maximum number of supervisory board mandates).
- II. The Board of Management and the Supervisory Board of Deutsche Telekom AG hereby declare further that as of today Deutsche Telekom AG complies with the recommendations of the Government Commission on the German Corporate Governance Code, published by the Federal Ministry of Justice in the official section of the Federal Gazette (Bundesanzeiger) on June 27, 2022, with the exception of recommendation C.5 (maximum number of supervisory board mandates).
- III. Reason for the declared deviation from recommendation C.5: According to recommendation C.5, members of the management board of listed companies should not have, in aggregate, more than two supervisory board mandates in non-group listed companies or comparable functions, and should not accept the chairmanship of a supervisory board in a non-group listed company. In the opinion of the Management Board and the Supervisory Board, the total number of supervisory board mandates held or the supervisory board chairmanship in non-group listed companies and comparable functions should be assessed more appropriately on a case-by-case basis than by means of a rigid limitation. As long as it is ensured that a member of the Supervisory Board of Deutsche Telekom AG has sufficient time to exercise this supervisory board mandate with due regularity and care, a deviation from recommendation C.5 may appear appropriate in individual cases, taking into account all relevant aspects of the respective circumstances.

Bonn, December 30, 2022

For the Supervisory Board
Dr. Frank Appel

For the Board of Management
Timotheus Höttges

Legal structure of the Group

Deutsche Telekom AG, Bonn, is the parent of the Deutsche Telekom Group. Its shares are traded on the Frankfurt/Main Stock Exchange as well as on other stock exchanges.

For information on the composition of capital stock in accordance with § 289a (1) HGB and § 315a HGB of direct and indirect equity investments, please refer to Note 19 "Shareholders' equity" in the notes to the consolidated financial statements and to the notes to the annual financial statements of Deutsche Telekom AG as of December 31, 2022.

Shareholders' equity

Each share entitles the holder to one vote. These voting rights are restricted, however, in relation to treasury shares (at December 31, 2022: around 14 million in total).

Treasury shares. The amount of issued capital assigned to treasury shares was approximately EUR 35 million at December 31, 2022. This equates to 0.3 % of share capital. 13,757,255 treasury shares were held at December 31, 2022.

For information on the treasury shares in accordance with § 160 (1) No. 2 AktG, please refer to Note 8 in the annual financial statements of Deutsche Telekom AG as of December 31, 2022 and to Note 19 "Shareholders' equity" in the notes to the consolidated financial statements.

The shareholders' meeting resolved on April 1, 2021 to authorize the Board of Management to purchase shares in the Company by March 31, 2026, with the amount of share capital accounted for by these shares totaling up to EUR 1,218,933,400.57, provided the shares to be purchased on the basis of this authorization in conjunction with the other shares of the Company that the Company has already purchased and still possesses or are to be assigned to it under § 71d and § 71e AktG do not at any time account for more than 10 % of the Company's share capital. Moreover, the requirements under § 71 (2) sentences 2 and 3 AktG must be complied with. Shares shall not be purchased for the purpose of trading in treasury shares. This authorization may be exercised in full or in part. The purchase can be carried out in partial tranches spread over various purchase dates within the authorization period until the maximum purchase volume is reached. Dependent Group companies of Deutsche Telekom AG within the meaning of § 17 AktG or third parties acting for the account of Deutsche Telekom AG or for the account of dependent Group companies of Deutsche Telekom AG within the meaning of § 17 AktG are also entitled to purchase the shares. The shares are purchased through the stock exchange in adherence to the principle of equal treatment (§ 53a AktG). Shares can instead also be purchased by means of a public purchase or share exchange offer addressed to all shareholders, which, subject to a subsequently approved exclusion of the right to offer shares, must also comply with the principle of equal treatment.

The shares may be used for one or several of the purposes permitted by the authorization granted by the shareholders' meeting on April 1, 2021 under item 7 on the agenda. The shares may also be used for purposes involving an exclusion of subscription rights. In addition, they may be sold on the stock market or by way of an offer to all shareholders, or withdrawn. The shares may be used to fulfill the rights of Board of Management members to receive shares in Deutsche Telekom AG, which the Supervisory Board has granted to these members as part of the arrangements governing the remuneration of the Board of Management, on the basis of a decision by the Supervisory Board to this effect. Furthermore, under the authorization granted on April 1, 2021, the Board of Management is authorized to offer and/or grant shares to employees of Deutsche Telekom and of lower-tier affiliated companies as well as to Managing Board members of lower-tier affiliated companies; this also includes the authorization to offer or grant shares free of charge or on other special conditions.

Under the resolution of the shareholders' meeting on April 1, 2021, the Board of Management is also authorized to acquire the shares through the use of equity derivatives.

No treasury shares were acquired in the reporting period and in the prior year. Currently, the treasury shares for participants of the Share Matching Plan and of the Shares2You share program for employees are issued from the pool of shares previously held in a trust deposit.

As part of the acquisition of VoiceStream Wireless Corp., Bellevue, and Powertel, Inc., Bellevue, in 2001, Deutsche Telekom AG issued new shares from authorized capital to a trustee, for the benefit of holders of warrants, options, and conversion rights, among others. These options or conversion rights expired in full in the 2013 financial year. As a result, the trustee no longer had any obligation to fulfill any claims in accordance with the purpose of the deposit. The trust relationship was terminated at the start of 2016 and the deposited shares were transferred free of charge to a custody account of Deutsche Telekom AG. The previously deposited shares are accounted for in the same way as treasury shares in accordance with § 272 (1a) HGB. On the basis of authorization by the shareholders' meeting on April 1, 2021, the treasury shares acquired free of charge may be used for the same purposes as the treasury shares acquired for a consideration. In the reporting year, 708 thousand previously deposited shares were reallocated for issue to eligible participants of the Share Matching Plan (prior year: 3,462 thousand shares).

For matching shares from the Share Matching Plan and for free shares from the employee share program Shares2You, treasury shares are transferred free of charge to the custody accounts of employees of Deutsche Telekom AG. In cases where treasury shares are transferred to the custody accounts of employees of other Group companies, the costs have been transferred at fair value to the respective Group company since the 2016 financial year. For treasury shares bought by way of the personal investment as part of the Shares2You program and transferred to the custody accounts of employees, a conversion rate of EUR 18.78 per share was used. The conversion is determined using the lowest price at which a trade actually took place on an official German exchange on the date of conversion.

In all months of the reporting year, except for September, treasury shares (760 thousand in total) were reallocated and transferred to the custody accounts of eligible participants (prior year: 3,485 thousand treasury shares). As of December 31, 2022, disposals of treasury shares resulting from the transfers in the reporting period accounted for 0.02 %, or EUR 1,947 thousand, of share capital. Gains on disposal arising from transfers of treasury shares amounted to EUR 12,225 thousand. The transfers of treasury shares increased the capital reserve by EUR 10,278 thousand. In the reporting year, 367 thousand treasury shares with a fair value of EUR 6,737 thousand were billed to other Group companies.

Authorized capital and contingent capital. The shareholders' meeting on May 31, 2017 authorized the Board of Management to increase the share capital with the approval of the Supervisory Board by up to EUR 3,600,000,000 by issuing up to 1,406,250,000 no par value registered shares against cash and/or contribution in kind in the period ending May 30, 2022. This authorization could be exercised in full or on one or more occasions in partial amounts. The Board of Management was authorized, subject to the approval of the Supervisory Board, to exclude residual amounts from shareholders' subscription rights. Furthermore, the Board of Management was authorized, subject to the approval of the Supervisory Board, to disapply shareholders' subscription rights in the event of capital increases against contribution in kind when issuing new shares for business combinations or acquisitions of companies, parts thereof, or interests in companies, including increasing existing investment holdings, or other assets eligible for contribution for such acquisitions, including receivables from the Company. However, the value of the new shares for which shareholders' subscription rights have been disapplied on the basis of this authorization – together with the value of the shares or conversion and/or option rights or obligations under bonds issued or sold since May 31, 2017 subject to the disapplication of subscription rights – was not allowed to exceed 20 % of the total share capital; the latter was defined as the amount existing as of May 31, 2017, upon entry of the authorization, or upon the issue of the new shares, whichever amount was lowest. If the issue or sale was carried out in analogous or mutatis mutandis application of § 186 (3) sentence 4 AktG, this also constituted the disapplication of subscription rights. Further, the Board of Management was authorized, subject to the approval of the Supervisory Board, to determine the further content of share rights and the conditions under which shares are issued (**2017 authorized capital**). The shareholders' meeting resolved on April 7, 2022 to cancel the 2017 authorized capital to the extent that it still existed, effective the date of entry of the 2022 authorized capital described below. Following the capital increase in September 2021 in return for a non-cash contribution, the 2017 authorized capital amounted to EUR 3,024,000,000. The cancellation of the remaining 2017 authorized capital was entered in the commercial register on June 7, 2022.

The shareholders' meeting on April 7, 2022 authorized the Board of Management to increase the share capital with the approval of the Supervisory Board by up to EUR 3,829,600,199.68 by issuing up to 1,495,937,578 no par value registered shares against cash and/or contribution in kind in the period ending April 6, 2027. The authorization may be exercised in full or on one or more occasions in partial amounts. The Board of Management is authorized, subject to the approval of the Supervisory Board, to exclude residual amounts from shareholders' subscription rights. Furthermore, the Board of Management is authorized, subject to the approval of the Supervisory Board, to disapply shareholders' subscription rights in the event of capital increases against contribution in kind when issuing new shares for business combinations or acquisitions of companies, parts thereof, or interests in companies, including increasing existing investment holdings, or other assets eligible for contribution for such acquisitions, including receivables from the Company. However, the value of the new shares for which shareholders' subscription rights have been disapplied on the basis of this authorization – together with the value of the shares or conversion and/or option rights or obligations under bonds issued or sold since April 7, 2022 subject to the disapplication of subscription rights – must not exceed 10 % of the total share capital; the latter is defined as the amount existing as of April 7, 2022, upon entry of the authorization, or upon the issue of the new shares, whichever amount is lowest. If the issue or sale is carried out in analogous or mutatis mutandis application of § 186 (3) sentence 4 AktG, this shall also constitute the disapplication of subscription rights. Further, the Board of Management is authorized, subject to the approval of the Supervisory Board, to determine the further content of share rights and the conditions under which shares are issued (**2022 Authorized Capital**).

As of December 31, 2022, the share capital was contingently increased by up to EUR 1,200,000,000, comprising up to 468,750,000 no par value shares (**2018 Contingent Capital**). The contingent capital increase will be implemented only to the extent that

- a. the holders or creditors of bonds with warrants, convertible bonds, profit participation rights, and/or participating bonds (or combinations of these instruments) with options or conversion rights, which are issued or guaranteed by Deutsche Telekom AG or its direct or indirect majority holdings by May 16, 2023, on the basis of the authorization resolution granted by the shareholders' meeting on May 17, 2018, make use of their option and/or conversion rights or
- b. those obligated as a result of bonds with warrants, convertible bonds, profit participation rights, and/or participating bonds (or combinations of these instruments), which are issued or guaranteed by Deutsche Telekom AG or its direct or indirect majority holdings by May 16, 2023, on the basis of the authorization resolution granted by the shareholders' meeting on May 17, 2018, fulfill their option or conversion obligations (including in the event that, in exercising a repayment option when the final due date of the bond is reached, Deutsche Telekom AG grants shares in Deutsche Telekom AG completely or partially in lieu of payment of the amount due)

and other forms of fulfillment are not used. The new shares shall participate in profits starting at the beginning of the financial year in which they are issued as the result of the exercise of any option or conversion rights or the fulfillment of any option or conversion obligations. The Supervisory Board is authorized to amend § 5 (3) of the Articles of Incorporation of Deutsche Telekom AG in accordance with the particular usage of the contingent capital and after the expiry of all the option or conversion periods.

Main agreements including a change of control clause

The main agreements entered into by Deutsche Telekom AG that include a clause in the event of a change of control principally relate to bilateral credit lines and several loan agreements. In the event of a change of control, the individual lenders have the right to terminate the credit line and, if necessary, serve notice or demand repayment of the loans. A change of control is assumed when a third party, which can also be a group acting jointly, acquires control over Deutsche Telekom AG.

On November 2, 2016, Deutsche Telekom AG signed a change agreement to the shareholder agreement with the Greek government from May 14, 2008 on Hellenic Telecommunications Organization S.A., Athens, Greece, (OTE); the change agreement concerned the accession of the Hellenic Republic Asset Development Fund (HRADF) as a party to the contract. Under this agreement, the Greek government is, under certain circumstances, entitled to acquire all shares in OTE from Deutsche Telekom AG as soon as one (or more) person(s), with the exception of the Federal Republic of Germany, either directly or indirectly acquire(s) 35 % of the voting rights of Deutsche Telekom AG.

In the master agreement establishing the procurement joint venture BuyIn in Belgium, Deutsche Telekom AG and Orange S.A. (formerly France Télécom S.A.)/Atlas Services Belgium S.A. (a subsidiary of Orange S.A.) agreed that if Deutsche Telekom or Orange comes under the controlling influence of a third party or if a third party that is not wholly owned by the Orange group of companies acquires shares in Atlas Services Belgium S.A., the respective other party (Orange and Atlas Services Belgium S.A. only jointly) may terminate the master agreement with immediate effect.

Changes in the composition of the Group

63 German and 290 foreign subsidiaries are fully consolidated in Deutsche Telekom's consolidated financial statements (December 31, 2021: 62 and 314). 14 associates (December 31, 2021: 16) and 15 joint ventures (December 31, 2021: 10) are also included using the equity method.

The principal subsidiaries of Deutsche Telekom AG are listed in the section "[Summary of accounting policies – Principal subsidiaries](#)" in the notes to the consolidated financial statements.

Business combinations

Deutsche Telekom did not consummate any material business combinations in the 2022 reporting year.

For further information, please refer to the section "[Summary of accounting policies – Changes in the composition of the Group and other transactions](#)" in the consolidated financial statements.